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DATE: June 13, 2013

TO: Historic Preservation Commission

FROM: Tina Tam, Senior Preservation Planner, (415) 558-6325

Rich Sucré, Historic Preservation Technical Specialist, (415) 575-9108

RE: **Review and Comment for on the Draft Environmental Impact Statement/ Environmental Impact Report (EIS/EIR) for the Downtown San Francisco Ferry Terminal Expansion Project (SCH #2011032066) Case No. 2013.0100E**

BACKGROUND

The Planning Department and Port of San Francisco has requested review and comment before the Historic Preservation Commission (HPC) regarding the Draft Environmental Impact Statement/Environmental Impact Report (EIS/EIR) for the Downtown Ferry Terminal Expansion Project.

The Project Sponsor, San Francisco Bay Area Water Emergency Transportation Authority (WETA) is proposing improvements to the existing Ferry Terminal in Downtown San Francisco to support existing and planned future water transit services operated by WETA, as well as WETA's emergency response operations. Among the various physical aspects of the project, the proposed project includes construction of three new ferry terminal berthing facilities, new photovoltaic canopies, and a new plaza along the Embarcadero between the Ferry Building and Agriculture Building.

The project site is located adjacent to the Port of San Francisco Embarcadero National Register Historic District, which is listed in the National Register of Historic Places, and the Ferry Building, which is designated as Landmark No. 90 in Article 10 of the San Francisco Planning Code.

On April 17, 2013, the Architectural Review Committee (ARC) of the Historic Preservation Commission reviewed the proposed project, and provided their comments in a letter dated April 25, 2013 (See Attached). In summary, the ARC requested additional information on the new Embarcadero Plaza and also provided design recommendations for new photovoltaic canopies to ensure their compliance with the Secretary of the Interior's Standards for Rehabilitation.

PROPERTY DESCRIPTION

The Downtown San Francisco Ferry Terminal Expansion is located along the Embarcadero adjacent to the Port of San Francisco Embarcadero Historic District between Pier 1 and Pier 14. The project site contains four existing ferry terminals berthing facilities (Gate B, Gate C, Gate D, and Gate E), the East Bayside Promenade (a canopy structure located behind the Ferry Building), and Ferry Plaza, as well as the Ferry Building and Agriculture Building, which are individually-designated historic resources in the National Register of Historic Places, as well as contributors to

the Port of San Francisco Embarcadero National Register Historic District. The project site is located within the C-2 (Community Business) Zoning District with a 85-J Height and Bulk Limit.

PROJECT DESCRIPTION

The San Francisco Bay Area Water Emergency Transportation Authority (WETA) is proposing to expand berthing capacity at the Downtown San Francisco Ferry Terminal (Ferry Terminal), located at the San Francisco Ferry Building (Ferry Building), to support existing and future planned water transit services operated by WETA and WETA's emergency operations, as detailed in WETA's Implementation and Operations Plan (IOP) (WETA, 2003b). The Downtown San Francisco Ferry Terminal Expansion Project (or project) would include construction of three new gates and overwater berthing facilities, in addition to supportive landside improvements, such as additional passenger waiting and queuing areas, circulation improvements, and other water transit-related amenities. The new gates and other improvements would be designed to accommodate future planned water transit services between Downtown San Francisco and Antioch, Berkeley, Martinez, Hercules, Redwood City, Richmond, and Treasure Island, as well as emergency operation needs. The proposed project is described in detail in Chapter 1.0 of the Draft EIS/EIR (See Page 1-1).

SUMMARY OF IMPACTS OF HISTORIC ARCHITECTURAL RESOURCES

To facility the review of the Draft EIS/EIR, the Department has included a hard copy version of the Figure ES-2 (Proposed Project Improvements) and Section 3.8 Cultural and Paleontological Resources of Chapter 3. Affected Environment, Consequences, and Mitigation.

According to the Draft EIS/EIR, the proposed project would result in two impacts to historic resources:

- The proposed project would directly affect the wood fendering along the southern edge of Pier 1 (See Page 2.8-33), which is a historic resource under the California Environmental Quality Act (CEQA). Specifically, the proposed project may replace the wood fendering located on Pier 1. Therefore, the Draft EIS/EIR includes "Mitigation Measure CUL-3 – Replacement in Accordance with Secretary of the Interior's Standards for Rehabilitation" and "Mitigation Measure CUL-4 – Plan for Protection Against, and Response to, Inadvertent Damage." Implementation of these mitigation measures would reduce this impact to a less-than-significant level.
- The proposed project has the potential to indirectly impact historic resources in the Focused Architectural Area of Potential Effect (APE) (See Page 3.8-38 to 3.8-54). Specifically, the proposed project's weather protection canopies could adversely affect the visual setting of adjacent historic resources. Therefore, the Draft EIS/EIR includes "Mitigation Measure CUL-6: Consultation with Local Agencies Regarding Final Design of Weather Protection Canopies and Secretary of the Interior's Standards for Rehabilitation" (See Page 3.8-58), to address the design of the weather protection canopies and require consultation with the Historic Preservation Commission. Implementation of this mitigation measures would reduce this impact to a less-than-significant level.

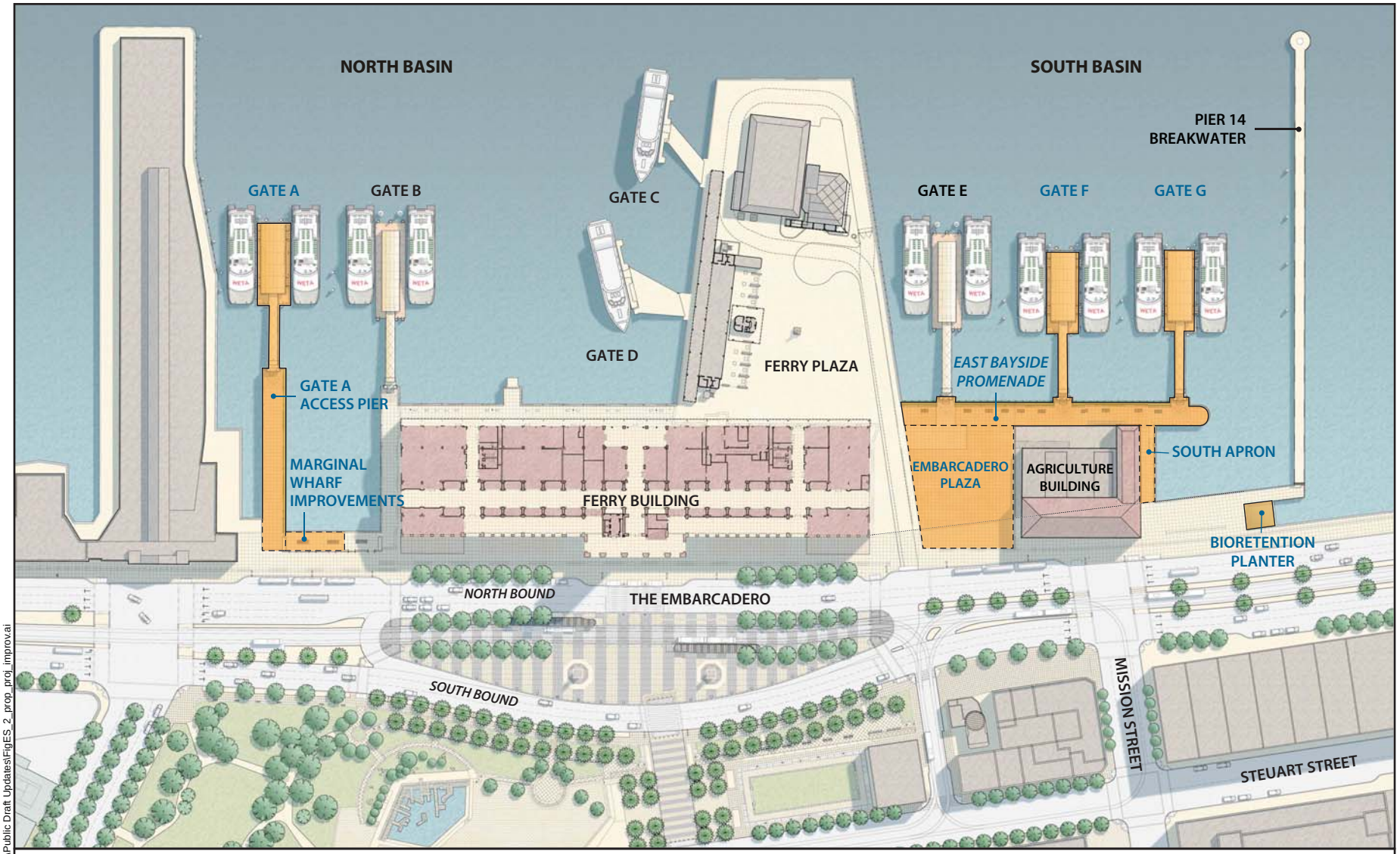
REQUESTED ACTION

The Historic Preservation Commission may comment on the adequacy and accuracy of the information presented in the Draft EIR/EIS, and direct staff or one of the commissioners to draft a comment letter on this environmental document.

To assist the Historic Preservation Commission in their comments, Department staff has drafted a preliminary comment letter, which incorporates the previous comments and recommendations offered by the Architectural Review Committee (ARC) in their previous letter dated April 25, 2013.

ATTACHMENTS

- *Draft Environmental Impact Statement/Environmental Impact Report (EIS/EIR), Downtown San Francisco Ferry Terminal Expansion Project (SCH #2011032066)*, Prepared by URS Corporation (June 2013) – Electronic CD;
- Excerpt of Figure ES-2. Proposed Project Improvements (Hard Copy);
- Excerpt of Chapter 3. Affected Environment, Consequences, and Mitigation - 3.8 Cultural and Paleontological Resources (Hard Copy);
- Letter to Mike Gougherty, WETA, from Architectural Review Committee of the Historic Preservation Commission, dated April 25, 2013; and,
- Preliminary Draft Comment Letter to Mike Gougherty, WETA (No Date).



Areas of Project Improvements

GATE A Project Element

N

0 50 100 150 FEET

Source: Roma Design Group, et al., 2012

PROPOSED PROJECT IMPROVEMENTS

Downtown San Francisco
Ferry Terminal Expansion Project
San Francisco, California

28067812

FIGURE ES-2

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3.8 CULTURAL AND PALEONTOLOGICAL RESOURCES

3.8.1 Introduction to the Analysis

This section describes the cultural and paleontological resources in the project area of potential effect (APE). This evaluation of impacts assessed the potential for the project to affect the historic architectural properties and resources and archaeological resources identified in the APE, as well as the potential for the project to affect paleontological resources. The evaluation complies with Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended, and also satisfies the California Environmental Quality Act (CEQA) requirement that California public agencies identify the significant environmental impacts of their actions as they pertain to historical resources.

There are no known archaeological resources in the Archaeological APE; however, the inadvertent discovery of archaeological materials during project activities represents a potential project impact. Implementation of mitigation measures identified in this section would reduce the project's potential to result in impacts to archaeological resources. There are several historic properties in the project APE. The project has the potential to directly impact historic properties or resources in the Architectural APE; however, mitigation measures would reduce potential impacts. The proposed project elements and project construction activities also have the potential to indirectly and adversely affect historic properties through the introduction of new visual features or damage from construction vibration. Construction vibration impacts would be avoided with the implementation of the vibration mitigation measures described in Section 3.7, Noise and Vibration. Pursuant to Section 106 of the NHPA, the Federal Transit Administration (FTA) concluded that this undertaking would have no effect on archaeological resources, and no adverse effect on historic architectural resources or historic properties. The State Historic Preservation Officer (SHPO) concurred with this determination on April 15, 2013 (refer to Appendix D). No paleontological resources have been previously identified in the project area; however, the project area is considered potentially sensitive for paleontological resources. Implementation of mitigation measures would reduce potential impacts to unknown significant paleontological resources, should they be discovered.

3.8.2 Affected Environment

Existing Setting

This section presents the potential cultural resources in the project area, and an overview of the study area's prehistory, ethnography, and history. The study area is defined as the project area and areas within ½ mile of the project area. Separate, more detailed technical reports describing the archaeological and historical architectural resources in the project area have been prepared for the project, and are available from WETA (URS, 2012b; URS and JRP Historical Consulting, 2012).

Prehistoric Background

Human settlement of the San Francisco Bay region is believed to have begun during the early Holocene period, circa 10,000 years ago. At that time, the mean sea level was considerably lower than today, and San Francisco Bay was more than 30 miles inland from the current-day coastline. Sea level rose, and by 8,000 years ago, marine waters began to inundate San Francisco Bay. Except for brief periods, the mean sea level has been at or above its present level for approximately 6,000 years (Moratto, 1984:221-223).

The oldest evidence of human occupation in the San Francisco Bay region was documented in northern Santa Clara County, where radiocarbon assaying has yielded dates of circa 8000 B.C. Evidence for more recent occupations, however, is more common. Radiocarbon dates from several sites in the areas surrounding and between San Francisco and Monterey bays range between circa 5000 and 2000 B.C. Data from these sites indicate that sparse populations of hunter-gatherers occupied these areas before

2000 B.C. Between the years 2000 and 1000 B.C., bayshore- and marsh-adapted peoples began to settle in the Bay Area. By circa 1500 B.C., Utian people had settled the area around the southern end of San Francisco Bay, from which they expanded to the north, west, and south. By circa 500 B.C., Costanoan peoples occupied essentially the same territory that they would until Euro-American contact (Moratto, 1984:279).

Ethnographic Background

The project area is situated in lands occupied during the ethnographic period by speakers of Ramaytush or San Francisco Costanoan. The territory inhabited by Costanoan peoples extended from the Carquinez Strait southward to the Sur River, and from the Pacific coast eastward to the Diablo Range (Kroeber, 1976:462; Moratto, 1984:225). This area was significantly affected by the Spanish presence in California. Between 1769 and 1776, seven Spanish expeditions entered the Costanoan lands; and by the close of the eighteenth century, seven missions had been established. At the time of these early contacts, approximately 10,000 Costanoan Indians existed, inhabiting roughly 50 politically autonomous tribelets. By 1832, the Costanoan population had declined to fewer than 2,000 individuals. Most of the surviving population relocated to the missions (Cook, 1943a, 1943b). The "missionized" Costanoan were often forced to assimilate with individuals of other ethnic and/or linguistic affiliations, resulting in the disruption of Native American cultural practices.

Levy estimated that in the early 1970s, the total number of persons of Costanoan descent was greater than 200 individuals (Levy, 1978:487). In 1971, descendants of the Costanoan incorporated as the Ohlone Indian Tribe, and received title to the Ohlone Indian Cemetery. The Ohlone Indian Tribe was recently officially recognized by the United States government.

Regional Historic Background

The Hispanic Period. The California coastline was familiar to navigators by the end of the sixteenth century (Donley et al., 1979). Conversely, the interior remained unknown until the eighteenth century. Initial European exploration of the project vicinity was initiated in 1769, and lasted until 1810. During this period, a number of Spanish expeditions penetrated the territory occupied by the Costanoan peoples. In the spring of 1776, the site of San Francisco was chosen by Anza for the establishment of a mission and military post. Later that same year, the Mission San Francisco de Asís and Presidio de San Francisco were officially dedicated, and Moraga (Anza's lieutenant) took formal possession in the name of King Carlos III (Hoover et al., 1990:331-334).

Jurisdiction over what is now California was established by Mexico in April 1822. During the Mexican Period (1822 to 1848), control over this remote area by the central and local Mexican authorities was never strong. Rather, the Mexican Period was one of a slow disintegration of control by the Mexican government. In 1833, the mission lands were secularized, expropriated, and given out as private ranches during the next decade in the form of land grants (Donley et al., 1979).

The American Period. A major factor leading to the disintegration of Mexican control of California was pressure from the United States. Initial contacts were made by private citizens, who brought the news of California back to the United States, helping trigger the immigration of United States citizens into California. The Mexican government became increasingly agitated by the continued influx of United States citizens into California.

The continued friction between Mexico and the United States ultimately led to the Mexican War of 1846 to 1847.

California became part of the United States as a consequence of the United States victory over Mexico in the war. The territory was formally ceded in the treaty of Guadelupe Hidalgo in 1848, and was admitted as a state in 1850 (Beck and Haase, 1974; Bethel, 1969).

Prior to the discovery of gold at Sutter's Mill on January 24, 1848, development in the area consisted of the Spanish/Mexican facilities (i.e., the Presidio de San Francisco and Mission San Francisco de Asís) and a small settlement known as Yerba Buena, situated on the shores of the cove of the same name. The inhabitants of Yerba Buena were predominantly non-Spanish, English-speaking immigrants (e.g., United States or British citizens). Sometime before the gold rush, the inhabitants of Yerba Buena officially changed the name of their settlement to San Francisco. Following the discovery of gold, San Francisco transformed rather quickly from an isolated hamlet into a bustling center of commerce (Hoover et al., 1990:334-336; Kemble, 1957:7). According to historic accounts cited by Hupman and Chavez (Hupman and Chavez, 1995:56), after the discovery of gold, the population of San Francisco grew from 375 people in 1847 to 2,000 by February 1849, and by the end of 1849, there may have been as many as 20,000 people living in the city.

Historic Maritime Background

Although it is well-documented that aboriginal inhabitants of the region used watercraft constructed of tule (Levy, 1978:406, 492), given the poor preservation qualities of this material, it is not anticipated that such craft remain preserved in the submarine environment. Therefore, only a discussion of historic period maritime activities is provided.

The Hispanic Period. Jose de Ortega may have observed the entrance to San Francisco Bay in 1769; however, the first undisputed identification of the entrance by nonnative peoples occurred on November 28, 1770, by the expedition of Pedro Fages. Entry into San Francisco Bay from the sea first occurred in August of 1775, when Juan Manuel de Ayala began his 2-month-long nautical survey of San Francisco Bay aboard the San Carlos (Beck and Haase, 1974:17).

With Mexico's independence from Spain in 1821, previous trade restrictions enforced by the Spanish were relaxed. Merchant vessels from the United States and Europe began freely entering San Francisco Bay. In addition to the merchant vessels, an occasional whaler or man-of–war would enter San Francisco Bay to restock provisions, including wood, food, and water (Kemble, 1957:1).

American Period. With the discovery of gold at Sutter's Mill in 1848, ship traffic into San Francisco Bay increased dramatically. By July 1850, more vessels entered San Francisco Bay than departed. Some 500 ships, inside and outside the anchorage, lay abandoned by their crews, who had deserted them in hopes of finding a better life, mostly in the gold fields.

San Francisco became a major city and port almost overnight and grew at a phenomenal rate, replacing Monterey as the coast's principal port. Large docks were built so that cargo could be discharged directly onto the wharves instead of being ferried by rowboats to shore. From those docks, the cargo was distributed and sometimes reloaded onto smaller vessels to transport to various settlements.

In the 1850s, commercial fishing in San Francisco Bay began with whaling and salmon fishing. Throughout California's coastal waters, shrimp were harvested and sold. After 1870, shrimp fishing evolved into a major industry along the shores of San Pablo and San Francisco bays. Approximately 26 fishing camps or villages have been recorded in this region. During the 1870s, a significant expansion of the fishing industry occurred due to the increased immigration of fisherman from Italy, Greece, China, and Portugal. By the beginning of the twentieth century, the staple yields of the fishing industry were salmon, crabs, cod, and oysters (Hart, 1978).

Ferry enterprises traveling to Oakland, San Pablo Bay, and San Francisco flourished during the late nineteenth century and the first half of the twentieth century. San Francisco Bay was a transportation corridor for both local and international traffic. During the early part of the American period, the ferries united the sparsely populated rural communities and ranches with San Francisco. By the early 1870s, the railroad companies owned the ferries operating on San Francisco Bay. As communities in the area grew larger, local trade produced a demand for more frequent ferry schedules and for inter-urban lines to feed the ferry terminals. Despite all this success, the needs of the Bay Area were rapidly changing. Most ferry service ceased in 1939 with the completion of several bridges spanning San Francisco Bay, and the opening of the Bay Bridge to electric trains.

Methods for Identifying Existing Conditions in the Study Area

A number of tasks, including archival research, Native American consultation, and archaeological field inventory efforts, have been completed to determine whether any cultural resources have been previously identified in or adjacent to the project area, as well as to identify previous cultural resources investigations. Archival research consisted of a literature review and record search of ethnographic and historic literature and maps; federal, state, and local inventories of historic properties; archaeological base maps and site records; and survey reports on file at the Northwest Information Center (NWIC) at Sonoma State University. The NWIC is a regional clearinghouse of the California Historic Resources Information System, an arm of California's Office of Historic Preservation. The purpose of the record search was to ascertain whether any cultural resources had been previously identified in or adjacent to the project area, as well as to identify previous cultural resources investigations. In addition, archival research was conducted in various repositories and online resources, including: San Francisco Planning Department; the San Francisco Public Library; the California State Library in Sacramento; Shields Library at the University of California, Davis; and Bancroft Library at the University of California, Berkeley. Lastly, the shipwreck database maintained by the California State Lands Commission (SLC) was used to augment the data obtained for these unique resources.

A request for a review of the Sacred Lands File was submitted to the Native American Heritage Commission (NAHC) to gather information on the presence of resources important to the local Native American community. In addition, the NAHC provided a list of contacts, all of whom were notified about the project; and information on their concerns and/or knowledge of resources in the area was requested.

Lastly, both archaeological and historic architectural field visits to the project area were undertaken. The archaeological component was limited to a cursory visit of the Archaeological APE, because the APE either consists of open water, or San Francisco Ferry Building (Ferry Building) development constructed over open water. The historic architectural component, as will be described below, included an inventory of historic structures in the APE for architectural resources, as defined for the project.

Archaeology Existing Conditions

The APE as defined for archaeological resources (Archaeological APE), shown on Figure 3.8-1, includes all areas where direct impacts to archaeological resources could occur as a result of project activities. The Archaeological APE comprises those areas where ground-disturbing activities associated with project implementation would occur, and is confined to the area east of The Embarcadero, south of Pier 1, and north of Pier 14. This area is currently inundated by the waters of San Francisco Bay, with structures (e.g., piers) built over the water in the western extent of the Archaeological APE. Pursuant to Section 106 of the NHPA, FTA initiated consultation with SHPO on June 4, 2012, regarding the delineation of the APE for archaeological resources. The SHPO concurred with the FTA delineation of the APE on September 13, 2012.

A review of the Sacred Lands File by the staff of the NAHC failed to identify specific information concerning areas in the Archaeological APE. The NAHC provided a list of groups and individuals who

could have an interest in the project area. The Native American groups and individuals identified by the NAHC were contacted, and any information or concerns they might have regarding the project was requested. As of June 2012, no responses have been received from the Native American community concerning cultural resources in the Archaeological APE.

The record search completed by the staff of the NWIC revealed that no archaeological resources have been identified in the Archaeological APE. There are several archaeological sites, both prehistoric and historic, within ½ mile of the APE. All, however, are landside of the seawall and not in the Archaeological APE. Although no archaeological resources have been previously identified in the APE, it is not because there have been no past studies in the area. The record search revealed that numerous cultural resources investigations have occurred in the vicinity, a few of which included portions of the Archaeological APE, as listed in Table 3.8-1.

Table 3.8-1
Record Search Results:
Past Cultural Resources Studies Conducted in the Archaeological APE

Survey Number	Title	Author(s)	Year
S-005380	San Francisco waterfront, Report on Historical Resources for the North Shore and Channel Outfalls Consolidation Projects.	Roger Olmstead, Nancy Olmstead, and Allen Pastron	1977
S-013405	San Francisco Municipal Railway, Metro Turnaround Project, Historical and Cultural Resource to 1887	E.M. Rose and Associates	1988
S-17827	An Archaeological Survey Report for the Ferry Building, San Francisco, California	Holman and Associates	1995
S-023228	Finding of No Adverse Effect, BART Seismic Retrofit Project, Berkeley Hills Tunnel to Montgomery Street Station, Caltrans District 4, Alameda and San Francisco Counties, California	Caltrans	2005
S-027480	Historical Resources Evaluation Report, BART Seismic Retrofit Project, Berkeley Hills Tunnel to Montgomery Street Station, Alameda and San Francisco Counties, California	BART	2005
S-031376	Historic Properties Survey Report, I-280 Transfer Concept Program, City and County of San Francisco, 04131-995142-3M013	Caltrans	1983
S-031997	Historic Properties Survey Report, BART Seismic Retrofit Project, Berkeley Hills Tunnel to Montgomery Street Station, Alameda and San Francisco Counties, California	David Stone and Karen Foster	2005
S-302020	Archaeological Survey Report, BART Seismic Retrofit Project, Berkeley Hills Tunnel to Montgomery Street Station, Alameda and San Francisco Counties, California	Caltrans	2005

Notes:

BART = Bay Area Rapid Transit
Caltrans = California Department of Transportation
I-280 = Interstate 280

The title to all abandoned shipwrecks, archaeological sites, and historic or cultural resources on or in the tide and submerged lands of California is vested in the State and under the jurisdiction of the SLC. The online SLC Shipwreck Database (SLC, 2011) was reviewed. The SLC database is a list of shipwrecks by county, and is based primarily on historical accounts of these incidents. It should be noted that most of the location data thus refer to where the ship went down and not necessarily where it came to rest on the sea floor, which may be in a different location. Figure 3.8-2 depicts the location of the reported shipwrecks. Table 3.8-2 lists the reported shipwrecks in the general vicinity of the Archaeological APE.

Table 3.8-2
Shipwreck Data from the State Lands Commission Database

Ship's Name (Year of Wreck)	Latitude	Longitude
Alice Garrett (1888)	37° 47' 50"	122° 23' 30"
Helen Hensley (1854)	37° 47' 56"	122° 23' 30"
Reliance (1945)	37° 48' 15"	122° 23' 50"
San Carlos (1797)	37° 48' 10"	122° 23' 40"
West Wind (1876)	37° 47' 40"	122° 23' 30"

As shown on Figure 3.8-2, the purported locations of two historic shipwrecks, the *Alice Garrett* and *West Wind*, occur in close proximity to the Archaeological APE. A third wreck, the *Helen Hensley*, occurs immediately to the north.

It should be noted that the SLC database does not indicate whether the wrecked vessel was ultimately salvaged. Given the close proximity of these wrecks to the historic shoreline, it would seem likely that these vessels would have been salvaged or at least demolished, because they would have represented navigational hazards to the ship traffic that was prevalent in this area. It is assumed that repeated dredging has historically taken place in the project area to accommodate the facilities and historic ship traffic in the project area, and that this dredging would have likely dislodged any remnants of these vessels if they remained in these locations in the twentieth century. Lastly, none of the cultural resources studies listed in Table 3.8-1 identified these shipwrecks as potential resources during their investigations. Therefore, it is unlikely that these shipwrecks are present in the Archaeological APE for the project.

Historic Architecture Existing Conditions

The Architectural APE, shown on Figure 3.8-3, was established to include any historic-period building, structure, or object that may be directly or indirectly affected by implementation of the project. The general Architectural APE includes the entire Port of San Francisco (Port) Embarcadero Historic District (Embarcadero Historic District) to account for potential indirect effects. As shown on Figure 3.8-4, the Focused Architectural APE coincides with the project area boundary line where it runs north to south along the eastern edge (northbound lane) of The Embarcadero. On the northern and southern boundaries, the Focused Architectural APE goes beyond the project areas to encompass Piers 1 and 14, both of which are in the viewshed of proposed project elements, to account for potential indirect effects. Together, the general Architectural APE and the Focused Architectural APE account for all the historic properties intersected by the project, and encompass the historic properties immediately adjacent to the project that could potentially experience indirect effects, such as vibration, noise, or visual effects. Pursuant to Section 106 of the NHPA, FTA initiated consultation with the SHPO on June 4, 2012, regarding the delineation of the APE for historical architectural resources. The SHPO concurred with the FTA delineation of the APE on September 13, 2012.

The record search conducted by NWIC revealed that there are several historic properties in the Focused Architectural APE that are listed in the National Register of Historic Places (NRHP). Two historic districts encompass or overlap in the Focused Architectural APE: the Embarcadero Historic District; and the Central Embarcadero Piers Historic District. In addition to contributing to one or both of these districts, three properties in the Focused Architectural APE—the Ferry Building, Agriculture Building, and Pier 1—are also listed individually in the NRHP and the California Register of Historical Resources (CRHR). The "New Seawall" is also listed as a contributor of the Embarcadero Historic District, but is not individually significant.[1]

The following studies and documents pertinent to the resources in the Focused Architectural APE were provided by the Water Emergency Transportation Authority (WETA), the NRHP/National Historic Landmark Archives in Washington, DC, and from the records search completed at the NWIC. The City of San Francisco Historical Landmarks List (Historic Preservation Commission, n.d.) was also consulted, which indicated that the Ferry Building is designated City Landmark #90.

- *The Port of San Francisco Embarcadero Historic District National Register Nomination* (Corbett et al., 2006), a comprehensive evaluation of the significant pier and wharf developments along a roughly 3-mile stretch of the city's waterfront;
- *Central Embarcadero Piers Historic District National Register Nomination* (Turnbull, 2002), which includes Piers 1, 1½, 3, and 5 as its contributors;
- *Pier 1 National Register Nomination* (Hillis, 1998);
- *Ferry Building (Union Ferry Depot Building) National Register Nomination* (McGuire, 1977); and
- *Agriculture Building (Ferry Station Post Office Building) National Register Nomination* (McGuire, 1978).

The list of known historic properties with the Focused Architectural APE and the eligibility status of those properties is presented in Table 3.8-3 (on the following page).

The Focused Architectural APE for this project also contains several buildings and structures that were built fewer than 50 years ago (i.e., after 1962).[2] These include: the Ferry Plaza and Golden Gate Ferry Terminal Building, Pier 2, Sinbad's Restaurant, and Pier 14, all of which were built in the 1970s or later.[3] These buildings and structures would not be considered historic properties due to their age.

JRP Historical Consulting, LLC visited the project site and Focused Architectural APE on April 19 and May 26, 2011, to verify the presence of known historic properties, and to update and confirm the adequacy of the previous evaluations.

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[1] The Cultural Resources section of the Technical Appendices for the Final Program Environmental Impact Report for the Expansion of Ferry Transit Service in the Bay Area, prepared by URS Corporation for the Water Transit Authority in June 2003, notes that the Ferry Building rests on the eastern side of the "New Seawall," which that study concluded had the potential to be eligible for the NRHP. The reference is to San Francisco's second great seawall, which was built incrementally between 1878 and 1915 to replace an earlier structure—the "Old Seawall." In 2006, the entire New Seawall, including the segment within the project area, was identified as a contributor to the Port of San Francisco Embarcadero Historic District, which was subsequently listed on the NRHP (Corbett et al., 2006).

[2] Construction dates for these resources were ascertained through review of documents obtained through the record search, historic and current U.S. Geological Survey topographic maps, and historic aerial photography. Historic aerial photographs of the study area from 1931 through 2005 were viewed online at historicaerials.com.

[3] The Secretary of the Interior guidelines for evaluation of NRHP eligibility is for buildings, structures or features 50 years of age or older to allow for adequate historical perspective.

Table 3.8-3
Properties in the APE that Are Listed in the National Register of Historic Places and California Register of Historical Resources

Resource Name	Year Built	Period of Significance	CHRS Code[1]	NRHP Eligibility Criteria[2]
Port of San Francisco Embarcadero Historic District	1878-1938	1878-1946	1S	A, B, C
Central Embarcadero Piers Historic District	1918-1931	1918-1952	1S	A, C
Seawall	1888-1915	1888-1946	1D[3]	n/a[4]
Bulkhead Wharf	1891-1915	1891-1946	1D[3]	n/a[4]
Pier 1	1929-1931	1931-1936	1S, 1D[3,5]	A, C
Ferry Building (Union Ferry Depot Building)	1895-1903	1898-1946[6]	1S, 1D[3] (San Francisco Designated Landmark #90)	A, C
Agriculture Building (Ferry Station Post Office Building)	1915	1915-1925	1S, 1D[3]	A, C

Notes:

[1] CHRS Codes:
1D – Contributor to a district of multiple resource property listed in the NRHP by the Keeper. Listed in the CRHR.
1S – Individual property listed in the NRHP by the Keeper. Listed in the CRHR.

[2] NRHP Eligibility Codes:
A – Associated with events that have made a significant contribution to the broad patterns of our history.
B – Associated with the lives of persons significant in our past.
C – Embody distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction.

[3] Contributor to Port of San Francisco Embarcadero Historic District.

[4] Structure is a contributor but not individually listed; eligibility criteria do not apply.

[5] Contributor to Central Embarcadero Piers Historic District.

[6] The 1977 NRHP nomination did not specify a period of significance for the Ferry Building. As a contributing element of the Port of San Francisco Embarcadero Historic District (January 2006), the Ferry Building has a period of significance from its initial occupation in 1898 to 1946, for its contribution to transportation and engineering; and from 1898 to 1903 for its neo-classical Beaux Arts style.

CHRS = California Historical Resource Status
CRHR = California Register of Historical Resources
NRHP = National Register of Historic Places

Historic Properties in the Focused Architectural APE

The Focused Architectural APE for this project is along the waterfront at the foot of Market Street, on the stretch of San Francisco's Embarcadero between Washington Street and just south of Mission Street (Figure 3.8-4). Although the Focused APE covers only a small proportion of the city's nearly 3-mile-long Embarcadero, it contains historic-period built environment features that date from the earliest phases of The Embarcadero's development—namely a circa 1880s section of "New Seawall"—and well into the twentieth century. The number of resources listed on the NRHP, built over a period spanning more than half a century, reflects the site's long history as one of San Francisco's principal transportation hubs. In addition to including several resources that contribute to the Embarcadero Historic District, the Focused

Architectural APE also includes three buildings and related structures that are individually listed (see Table 3.8-3).

The following sections summarize the NRHP and CRHR eligibility status of the historic-period buildings and structures that have been identified in the Focused Architectural APE for the project.

Port of San Francisco Embarcadero Historic District

The Embarcadero Historic District stretches nearly 3 miles along San Francisco's waterfront, from Pier 45 on the north to Pier 48 on the south (Figure 3.8-3). The National Park Service listed the district on the NRHP on May 12, 2006 (NRHP Property #06000372), at which time it was automatically placed on the CRHR. The Embarcadero Historic District was determined significant under NRHP Criteria A, B, and C.

The district represents a rare surviving example of the once common "break bulk" type of port, which employed the traditional method of cargo handing (in contrast to modern containerization), in which individual boxes, crates, barrels, and the like are loaded and unloaded individually using cranes, winches, and other devices. The district consists of 47 contributing resources that include several elements common to break bulk ports: a seawall; bulkhead wharfs; and piers and their related buildings, including bulkhead buildings, transit sheds, and other small structures (Corbett et al., 2006, Section 7).

The district boundaries were drawn to include the major waterfront features, so that the inshore line follows the inside edge of the top of the seawall, defined more or less by the façades of the buildings built along The Embarcadero. The outshore line is drawn to include the buildings, piers, seawall, and portions of the bulkhead wharf that are contributors to the district; it follows the edges of these structures and excludes the water basins and noncontributing structures between them. The district is discontiguous, divided in two sections by China Basin, a water channel near the southern end of the district (Corbett et al., 2006, Section 10).

The seawall (sometimes referred to as the "New Seawall") and associated bulkhead wharf segments were evaluated for the first time as part of the Embarcadero Historic District study and are listed as contributing elements. The construction histories and character-defining features of the sections of these resources in the APE are summarized below.

Also within the boundaries of the Embarcadero Historic District are four properties that were previously listed in the NRHP, all of which are wholly or in part within the Focused Architectural APE: the Ferry Building (listed December 1, 1978, NRHP Property #78000760); the Agriculture Building (listed December 1, 1978, NRHP Property #78000756); Pier 1, listed individually (January 5, 1999, NRHP Property #98001551); and the Central Embarcadero Piers Historic District, including Piers 1, 1½, 3, and 5 (listed November 20, 2002, NRHP Property #02001390). These resources are described in further detail below.

Seawall and Bulkhead Wharf

The seawall is "a linear embankment of stone, concrete, and wood, which defines San Francisco's waterfront for more than 3 miles along a curving line from the foot of Jones Street on the north (Pier 45) to the mouth of China Basin on the east, and for an additional 500 feet south of China Basin (to Pier 48)" (Corbett et al., 2006, Section 7). The seawall is a contributing element of the Embarcadero Historic District and unifies the physical form of the district. Within the APE—and in fact throughout most of the Embarcadero Historic District—the seawall is obscured from view by the bulkhead wharves and piers built on top of it, but construction records show that it consists of an embankment of rocks set in a trench with sides that rise to a flat top. Because the seawall was built incrementally from 1878 through 1915,

with design variations from section to section, there are some dimensional differences, such as the width of the base trench, the embankment height, and the crown width.

Attached to the crest of the seawall and cantilevered into San Francisco Bay are the bulkhead wharf structures. Like the seawall, the bulkhead wharf is a linear feature consisting of separately built structures that connect end to end throughout the length of the historic district. They are horizontal platforms that rest on piles driven vertically into the seawall embankment as far as the waterfront line, which is defined by the toe of the seawall. The portions of the bulkhead wharf that contribute to the historic district date to the district's period of significance—and serve as the constructed edge of the waterfront between the piers—act as a supporting structure of buildings, and allow access between pier/transit sheds, berthed vessels, and The Embarcadero (see Figure 3.8-5).

Piers are also pile-supported horizontal platforms but unlike bulkhead wharves, they typically extend perpendicularly into San Francisco Bay and include three components: the pier substructure (consisting of pilings, caps that span the pilings, and a deck that rests on the caps); a transit shed (an enclosed warehouse building that rests on and covers most of the pier deck); and a bulkhead building (an enclosed building, usually used to house offices or passenger facilities, that rests on the bulkhead wharf and faces The Embarcadero) (Corbett et al., 2006, Section 7:81).

The relationship of the seawall, bulkhead wharf, and pier buildings is shown on Figure 3.8-5.

For the purposes of organization and to follow historical naming conventions, the authors of the Embarcadero Historic District study identified the various sections of the seawall and attached bulkhead wharf according to section number, listed in ascending order from north to south (Corbett et al., 2006, Section 7:19). The four portions of seawall and bulkhead wharf that are fully or partially in the Focused Architectural APE are Sections 7, 8a, 8b, 8, and 9a, as shown on Figure 3.8-5. Section 9a is not a contributing feature of the historic district due to loss of integrity.

Central Embarcadero Piers Historic District

The Central Embarcadero Piers Historic District, whose contributing elements are Piers 1, 1½, 3, and 5, is along San Francisco's northeastern waterfront, immediately north of the Ferry Building (Figure 3.8-5). The National Park Service listed the district on NRHP on November 20, 2002 (NRHP Property #02001390), at which time it was automatically placed on the CRHR.

The Central Embarcadero Piers Historic District was determined significant under NRHP Criterion A at the state level, for its association with commerce and transportation in San Francisco.[4] The district is also eligible under Criterion C on the local level, as one of the two largest remaining pier groups on the Northeast Waterfront conveying the original Beaux Arts design that characterized San Francisco's waterfront in the early twentieth century.

The district boundary was drawn to encompass the contributing features, which are all along the eastern side of The Embarcadero between Washington Street and Broadway (see Figure 3.8-3).

Each of the four contributing piers was originally composed of three parts (although not all of the original elements survive): a bulkhead building, along The Embarcadero with a west-facing façade; the pier structure extending into San Francisco Bay; and a transit shed built atop the pier structure. The bulkhead buildings on Piers 1, 1½, 3, and 5 all survive and share character-defining features.

[4] The Central Embarcadero Piers Historic District is entirely within the boundaries of the Port of San Francisco Embarcadero Historic District. The Central Embarcadero Piers Historic District was nominated first, and the Port of San Francisco Embarcadero Historic District was nominated later to expand the Central Embarcadero Piers Historic District; however, both districts and district boundaries remained.

Piers 1, 1½, 3, and 5 are built on a portion of seawall constructed in 1889, which is a contributing element to the Embarcadero Historic District (2006), as discussed below.

In addition to contributing to both the Central Embarcadero Piers Historic District and Embarcadero Historic District, Pier 1 is also individually listed on the NRHP. The individual resource is discussed in further detail below.

Pier 1

Pier 1 is on the eastern side of The Embarcadero at the foot of Washington Street (Figures 3.8-3 and 3.8-4). The pier was completed in 1931 and includes the bulkhead building along The Embarcadero, the utilitarian transit shed on the San Francisco Bay side, and the finger pier upon which the transit shed is built. Pier 1 is the southernmost of a continuous façade consisting of the Pier 1, Pier 1½, and Pier 3 bulkhead buildings. The National Park Service listed Pier 1 on the NRHP on January 5, 1999 (NRHP Property #98001551), at which time it was automatically placed on the CRHR.

Pier 1 was determined significant under NRHP Criterion A at the state level, for its association with San Francisco maritime commerce and transportation. It is also significant under Criterion C in the area of architecture, as an important example of the neo-classical architecture used by the California State Harbor Commissioners' 1915 City Beautiful-inspired plan. The property boundary is the footprint of the pier structure and bulkhead building, encompassing an area of 118,313 square feet.

Pier 1 was rehabilitated during 2001 to 2002 to serve as Port and private business offices. The work was completed as a federal historic tax credit project, using the Secretary of the Interior's Standards for Rehabilitation. The project included rebuilding the deck apron, filling the interior of the transit shed for adaptive reuse, seismic repairs, and construction of a wharf between the bulkhead wharf and south apron. Original wood fender pilings were retained on the southern side of the pier (Thatcher, 2000a, 2000b, 2001; Page & Turnbull, 2002). The character-defining features on the exterior of the building remain essentially the same as described in the 1998 nomination.

Pier 1 is also a contributing element to both the Central Embarcadero Piers Historic District and the Embarcadero Historic District (see descriptions above).

Ferry Building (Union Ferry Depot Building)

The Ferry Building, known originally as the Union Ferry Depot Building, is on The Embarcadero at the foot of Market Street (Figure 3.8-3). Constructed from 1895 to 1903, the Ferry Building was one of the busiest transportation points on the Pacific Coast until the decline of water transit traffic following the completion of the Bay Bridge in 1937. The Ferry Building was listed on the NRHP on December 1, 1978. The property boundary is the footprint of the building, encompassing an area of 120,716 square feet (NRHP Property #78000760) (McGuire, 1977).

The original nomination form did not specify under which NRHP criteria the Ferry Building was eligible, nor did it establish a period of significance for the property. Its eligibility was clarified when it was identified as a contributing element of the Embarcadero Historic District (Corbett et al, 2006). The Ferry Building is significant under NRHP Criterion A at the national level, in the area of transportation, with a period of significance from its initial occupation in 1898; to 1946, which marked the dramatic decline of shipping activity after World War II. Under Criterion C, the building is also significant in engineering for its reinforced concrete design that withstood the 1906 San Francisco Earthquake, and as an important local example of the neo-classical Beaux Arts style.

During the 1950s, the Ferry Building was extensively remodeled to include office space. Beginning in 1998 and completed in 2003, the Ferry Building was renovated and redeveloped as a mixed-use property,

following the Secretary of the Interior's Standards for Rehabilitation. The project restored many original features and removed other historically unsympathetic materials and design elements, thus returning the building to a closer approximation of its original appearance, but also changing several features present at the time it was described for listing in the NRHP in 1978. Many of the building's basic character-defining features were retained or refurbished.

Most of the changes from the renovation were to the building's interior and east (Bayside) façade. The ground floor level was converted to a public foods marketplace, with thirty 8-foot-tall gates lining the nave, each of which opens to an individual shop. The upstairs level includes rows of office space.

The exterior changes to the building since 1978 are mostly confined to the eastern side, which at that time had been substantially altered from its original appearance. The renovation project replaced the existing eastern façade in its entirety with a 10-foot-deep cantilevered metal extension that runs the length of the façade, and includes a continuous row of 11-foot-tall arched windows that "provide[s] a modern interpretation of the windows that once admitted light into the second floor waiting rooms." At the foot of the building on this façade is a new, 30-foot-wide wharf for pedestrian foot traffic.

The Ferry Building is also a contributing element to the Embarcadero Historic District (Corbett et al, 2006). The Ferry Building was designated a National Historic Civil Engineering Landmark by the American Society of Civil Engineers in November 1975, and a San Francisco City Landmark #90 in 1977.

Agriculture Building (Ferry Station Post Office Building)

The Agriculture Building, originally known as the Ferry Station Post Office Building, is on The Embarcadero at the foot of Mission Street (Figures 3.8-3 and 3.8-4). It was built in 1915; and until 1925, it served as a post office, after which it was occupied by Southern Pacific and other companies. By 1933, it was occupied by the Department of Agriculture, and became known as the "Agriculture Building." The National Park Service listed the building in the NRHP on December 1, 1978. The property boundary is the footprint of the building, encompassing an area of 25,238 square feet (NRHP Property #78000756) (McGuire, 1978).

The Agriculture Building was determined significant under NRHP Criterion A at the local level, for its association with the centralization of San Francisco's postal system; and under Criterion C, in the area of architecture, as a surviving example of the Mediterranean-style government architecture designed by the California State Harbor Commissioner.

The Agriculture Building is a Mediterranean-style, two-story, steel-frame building on a granite base, with tile hip roof. Character-defining features include red brick Flemish bond, light-ochre terra cotta trim and surrounds around entries, upper beltcourse, copper cornice, wood casement windows, iron doors, and door and window pattern. A field check confirmed that the exterior of the building remains essentially the same as described in the 1978 nomination.

The Agriculture Building is also a contributing element to the Embarcadero Historic District, discussed above.

Paleontological Setting and Assessment

Paleontological resources are fossils (the remains of ancient plants and animals) and trace fossils (such as burrows or tracks) that can provide scientifically significant information on the history of life on earth. Assessments of the scientific significance of these remains are based on whether they can provide data on the taxonomy and phylogeny of ancient organisms, the paleoecology and nature of paleoenvironments in the geologic past, or the stratigraphy and age of geologic units. Fossils need not be mineralized to be of

scientific significance. In areas dominated by geologically recent sedimentation in estuarine environments (as is the case in the vicinity of the current project area), the remains of extinct Pleistocene fauna are preserved due to anaerobic (oxygen-free) conditions, and are usually unaltered and not mineralized.

This section describes the paleontological resources potential of the project area. It complies with standards and guidelines recommended by the Society of Vertebrate Paleontology (SVP) (SVP, 1995). The SVP, an international scientific organization of professional vertebrate paleontologists, has developed guidelines that outline acceptable professional practices in the conduct of paleontological resource assessments; these guidelines are the standard against which paleontological regulatory compliance programs are evaluated.

For undertakings that require compliance with regulations for the management of paleontological resources, SVP guidelines recommend having literature and museum archival reviews, and a field survey.

Geology and Stratigraphy

The geologic setting of San Francisco Bay, including the project area, is described in Section 3.13, Geology, Soils, and Seismicity. The vicinity of the project area has been developed over the years by artificially filling the waterfront and constructing various seawalls to enable construction of piers, buildings, and roadways. Numerous geotechnical borings have been drilled and sampled to evaluate subsurface conditions at the location of the Ferry Building, the Muni Metro Turnaround, piers, and potential commercial buildings. In general, the landward boundary of the project area is along the seawall. The waterside portion of the site is underlain by relatively soft recent deposits (Young Bay Mud) on the order of 100 feet thick, overlying a thin accumulation of Bay sediments (i.e., Merritt Sand) and Old Bay Mud at an approximate thickness of 60 feet. Bedrock of the Franciscan Assemblage is at a depth of approximately 250 feet below the mudline (bottom of Bay).

For the paleontological analysis, sensitivity ratings are presented of those underlying strata that could be encountered during project implementation. As proposed, the project would require the installation of piles though the Young Bay Mud and into the underlying Merritt Sand and Old Bay Mud. No elements of the project would extend to the depth of the underlying bedrock. Therefore, the paleontological sensitivity of the Young Bay Mud, Merritt Sand, and Old Bay Mud are relevant for the project. The paleontological sensitivity ratings of the strata found to be in the project vicinity are based on the available literature, and on the known geologic process that led to their formation.

Young Bay Mud. Numerous Late Pleistocene and Holocene fossils have been reported from sediments referred to as San Antonio Formations in the San Francisco area, the marine facies of which appear to be represented by the Young Bay Mud. Fossils recovered from such sediments at sites in the area around San Francisco Bay include microfossils useful in paleoenvironmental reconstructions (radiolaria, foraminifera, sponge spicules, coccoliths, diatoms, dinoflagellates, pollen, and spores) (Atwater et al., 1977; McGann et al., n.d.; Sloan, 1992). Schlocker has also reported fossil plant remains from sediments he referred to as "Bay mud and clay" (Schlocker, 1974), while Bonilla reported fossil shells and plant remains from what he termed "Bay Mud" (Bonilla, 1971). More recently, Fisk recovered abundant fossil mollusk shells from cores retrieved from Young Bay Mud at depths of approximately 20 and 25 feet (Fisk, 2004).

The record search revealed that sediments commonly referred to as Young Bay Mud have produced numerous significant plant, invertebrate, and vertebrate fossils at numerous previously recorded fossil sites. Several previously recorded fossil localities are recorded in the San Francisco waterfront, including sites containing vertebrate fossils within the limits of the Islais Creek estuary. In addition, abundant fossil mollusks were observed in such sediments by Fisk in the Potrero Point vicinity (Fisk, 2004). The presence of these previously recorded fossil sites in nearby Late Pleistocene to early Holocene sediments suggests that Young Bay Mud in the project area is potentially sensitive for paleontological resources.

Merritt Sand and Old Bay Mud. These Late Pleistocene sediments date to the Last Interglaciation (circa 128,000 and 75,000 years ago) during which, for part of this time, sea level was actually higher than the present by 6.5 to 10 feet. Significant marine and terrestrial fossils have been previously recovered from these strata, including by Rodda and Baghai who reported bones and teeth of mammoth and extinct bison from sands and clays unconformably overlying the Franciscan Complex in downtown San Francisco (Rodda and Baghai, 1993). Marine facies, including some units identified as the Merritt Sand, have produced marine megafossils, marine and nonmarine diatoms, and sponge spicules (Schlocker, 1974). Fossil mollusk shell fragments were recovered from a geotechnical sample in what Fisk identified as Merritt Sand (Fisk, 2004). This geotechnical boring was from the Potrero Point vicinity, approximately 2.6 miles south of the project area. In addition, Radbruch and Schlocker reported the recovery of fossils from borings in the Islais Creek area (approximately 3.6 miles south of project area), in sediment identified as Old Bay Mud. Radbruch and Schlocker also reported the discovery of fossil plants and mollusk fossils in an excavation at the Southeast Sewage Treatment Plant (now known as the Southeast Water Pollution Control Plant (Radbruch and Schlocker, 1958).

The record search has revealed that the Merritt Sand and Old Bay Mud have produced significant fossils at numerous previously recorded fossil localities in the Bay Area, including in a geotechnical borehole south of the project area near Potrero Point (Fisk, 2004). The presence of these fossil sites suggests that Merritt Sand and Old Bay Mud in project area are potentially sensitive for paleontological resources.

Regulatory Setting

Cultural resources are defined as buildings, sites, structures, or objects, each of which may have historical, architectural, archaeological, cultural, or scientific importance. Numerous laws, regulations, and statutes, on both the federal and state levels, seek to protect and target the management of cultural resources.

Federal

Historic Sites Act (1935)

The Historic Sites Act, regulated at 16 United States Code (USC) 461 et seq., declares a national policy to preserve historic sites, buildings, antiquities, and objects of national significance, including those located on refuges. The Historic Sites Act provides procedures for designation, acquisition, administration, and protection of such sites.

National Historic Preservation Act, as Amended (1966)

The NHPA declares federal policy to protect historic sites and values in cooperation with other nations, states, and local governments. The NHPA establishes a program of grants to assist states for historic preservation activities. Subsequent amendments designated the SHPO as the individual responsible for administering state-level programs. The act also created the President's Advisory Council on Historic Preservation (ACHP). Federal agencies are required to consider the effects of their undertakings on historic resources, and to give the ACHP a reasonable opportunity to comment on those undertakings. A lead federal agency will be responsible for project compliance with Section 106 of the NHPA and its implementing regulations, set forth by the ACHP at 36 Code of Federal Regulations (CFR) 800.

National Environmental Policy Act, as Amended (1969)

Under the National Environmental Policy Act (NEPA), 42 USC Sections 4321-4327, federal agencies are required to consider potential environmental impacts and appropriate mitigation measures for projects with federal involvement. The Council on Environmental Quality NEPA regulations state that an environmental impact statement (EIS) shall include, among other analysis topics, discussions of historic and cultural resources (40 CFR 1502.16). In addition, FTA NEPA regulations require a Final EIS that

documents compliance with all applicable laws (23 CFR 771.125[a][1]). This regulation is complemented by the Section 106 NHPA regulations, which encourage agencies to coordinate Section 106 compliance with the NEPA process, and to meet the purposes and requirements of both statutes in a timely and efficient manner (36 CFR 800.8).

Archaeological and Historic Preservation Act (1974)

Under 16 USC 469-469c, the Archaeological and Historic Preservation Act requires federal agencies to provide notice to the Secretary of the Interior of any dam constructions or alterations of terrain and, if archaeological resources are found, for recovery or salvage of them. The law applies to any agency whenever it receives information that a direct or federally assisted activity could cause irreparable harm to prehistoric, historic, or archaeological data. Up to 1 percent of project funds could be used to pay for salvage work. The NHPA also authorized additional funding to be availed for this purpose.

American Indian Religious Freedom Act (1978)

The American Indian Religious Freedom Act, 42 USC 1996, et seq., regulated under 43 CFR 7, has been established to protect religious practices, ethnic heritage sites, and land uses of Native Americans. It directs various federal departments, agencies, and other instrumentalities responsible for administering relevant laws to evaluate their policies and procedures in consultation with Native American traditional religious leaders, to determine changes necessary to protect and preserve Native American cultural and religious practices.

Archaeological Resources Protection Act (ARPA) (1979)

ARPA supplements the provisions of the Antiquities Act of 1906, and declares it illegal to excavate or remove from federal or Native American lands any archaeological resources without a permit from the land manager (or federal agency with jurisdiction over those lands). ARPA would also apply to underwater cultural resources if they are found in locations under federal jurisdiction.

Submerged Lands Act (1953)

This act is largely superseded by the Abandoned Shipwreck Act, but has been used by states to protect abandoned historic shipwrecks by citing various state-level historic preservation laws. The Submerged Lands Act established state jurisdiction over offshore lands within 3 miles of shore (or 3 marine leagues for Texas and the Gulf coast of Florida).

Abandoned Shipwreck Act (1987)

The Abandoned Shipwreck Act, 43 USC 2101–2106, is a federal-level legislative act, but it does protect shipwrecks found in state waters. The Abandoned Shipwreck Act also states that the laws of salvage and finds do not apply to abandoned shipwrecks protected by the act. Under the Abandoned Shipwreck Act, the United States asserts title to abandoned shipwrecks in state waters that are either:

- Embedded in state-submerged lands;
- Embedded in the coralline formations protected by a state on submerged lands; or
- Resting on state-submerged lands and are either included in or determined eligible for the NRHP.

The Abandoned Shipwreck Act also has a provision for the simultaneous transfer, by the federal government, of title for those abandoned shipwrecks to the state(s) in whose waters the wrecks are located.

State

CEQA and CEQA Guidelines

In California, cultural resources include archaeological and historical objects, sites and districts, historic buildings and structures, cultural landscapes, and sites and resources of concern to local Native American and other ethnic groups. CEQA Section 21084.1 defines a historic resource under CEQA, and the level of change that would cause a significant effect on a historic resource. Compliance procedures are set forth in CEQA Guidelines Sections 15064.5 and 15126.4.

At the state level, consideration of significance as an "important archaeological resource" is measured by cultural resource provisions considered under CEQA Section 21084.1 and CEQA Guidelines Sections 15064.5 and 15126.4(b), and the draft criteria regarding resource eligibility to the CRHR.

Section 15064.5 of the CEQA Guidelines also assigns special importance to human remains and specifies procedures to be used when Native American remains are discovered. These procedures are detailed under California Public Resources Code (PRC) Section 5097.98.

California Native American Graves Protection and Repatriation Act (2001)

In the California Health and Safety Code, Division 7, Part 2, Chapter 5 (Sections 8010-8030)[5], broad provisions are made for the protection of Native American cultural resources. The act sets the state policy to ensure that all California Native American human remains and cultural items are treated with due respect and dignity.

California Public Resources Code, Section 5020

This California code created the California Historic Landmarks Committee in 1939, and authorizes the Department of Parks and Recreation to designate Registered Historical Landmarks and Registered Points of Historical Interest.

California Public Resources Code, Section 5097.9

Procedures are detailed under PRC Section 5097.9, for actions taken whenever Native American remains are discovered. No public agency, and no private party using or occupying public property, or operating on public property, under a public license, permit, grant, lease, or contract made on or after July 1, 1977, shall in any manner whatsoever interfere with the free expression or exercise of Native American religion as provided in the United States Constitution and the California Constitution; nor shall any such agency or party cause severe or irreparable damage to any Native American sanctified cemetery, place of worship, religious or ceremonial site, or sacred shrine on public property, except on a clear and convincing showing that the public interest and necessity so require.

California Public Resources Code, Section 7050.5

Every person who knowingly mutilates or disinters, wantonly disturbs, or willfully removes any human remains in or from any location other than a dedicated cemetery without authority of law is guilty of a misdemeanor, except as provided in Section 5097.99 of the PRC. In the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site, or any nearby area reasonably suspected to overlie adjacent remains, until the coroner of the county in which the human remains are discovered has determined the remains to

[5] Commonly known and cited as the California Native American Graves Protection and Repatriation Act of 2001.

be archaeological. If the coroner determines that the remains are not subject to his or her authority, and if the coroner recognizes the human remains to be those of a Native American or has reason to believe that they are those of a Native American, he or she shall contact the NAHC by telephone within 24 hours.

California Public Resources Code, Section 7051

Every person who removes any part of any human remains from any place where it has been interred, or from any place where it is deposited while awaiting interment or cremation, with intent to sell it or to dissect it, without authority of law, or written permission of the person or persons having the right to control the remains under Section 7100, or with malice or wantonness, has committed a public offense that is punishable by imprisonment in the state prison.

Administrative Code, Title 14, Section 4307

Under this state preservation law, no person shall remove, injure, deface, or destroy any object of paleontological, archaeological, or historical interest or value.

Local

San Francisco Historic Preservation Commission and Planning Code, Articles 10 and 11.

The Office of Historic Preservation has included the City and County of San Francisco on its list of Certified Local Governments, which means that San Francisco has an approved historic preservation ordinance, Historic Preservation Commission, and other formal processes related to historic preservation and cultural resources management. Article 10 describes procedures regarding the preservation of sites and areas of special character or special historical, architectural, or aesthetic interest or value, designated as City Landmarks and included within locally designated historic districts. Article 11 of the Planning Code designated six downtown conservation districts. The Ferry Building is designated as a landmark pursuant to Article 10 of the Planning Code.

Port of San Francisco Review Procedures for Alterations to Historic Resources Port Commission Resolution No. 04-89.

Port Commission Resolution 04-89 requires that all work in the Embarcadero Historic District be consistent with the Secretary of the Interior's Standards for the Treatment of Historic Properties. The Waterfront Design Advisory Committee is responsible for design and architectural review of major Port projects, and also reviews projects for consistency with the Secretary of the Interior's Standards for Historic Rehabilitation for alterations to designated historic resources and projects within historic districts. This design review process would also be coordinated with other agencies with jurisdiction over and expertise in areas along the waterfront, including the Bay Conservation and Development Commission and, given the historic resources within the project area, the San Francisco Historic Preservation Commission. The public is invited to participate in the design review process.

Significance Criteria for Evaluation of Cultural Resources

Federal Significance Criteria

The four evaluation criteria to determine a resource's eligibility to the NRHP, in accordance with the regulations outlined in 36 CFR 800, are identified at 36 CFR 60.4. These evaluation criteria, listed below, are used to help determine what properties should be considered for protection from destruction or impairment resulting from project-related activities (36 CFR 60.2).

The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:

(a) Resources that are associated with events that have made a significant contribution to the broad patterns of our history; or

(b) Resources that are associated with the lives of persons significant in our past; or

(c) Resources that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

(d) Resources that have yielded, or may be likely to yield, information important in prehistory or history (36 CFR 60.4).

A property may also possess traditional cultural significance that may make it eligible for inclusion in the NRHP. "Traditional" in this context refers to those beliefs, customs, and practices of a living community of people that have been passed down through the generations, usually orally or through practice. The traditional cultural significance of a historic property, then, is derived from the role the property plays in a community's historically rooted beliefs, customs, and practices. Examples of properties possessing such significance include:

- a location associated with the traditional beliefs of a Native American group about its origins, its cultural history, or the nature of the world;
- a rural community whose organization; buildings and structures; or patterns of land use reflect the cultural traditions valued by its long-term residents;
- an urban neighborhood that is the traditional home of a particular cultural group, and that reflects its beliefs and practices;
- a location where Native American religious practitioners have historically gone, and are known or thought to go today, to perform ceremonial activities in accordance with traditional cultural rules of practice; and
- a location where a community has traditionally carried out economic, artistic, or other cultural practices important in maintaining its historic identity.

A traditional cultural property, then, can be defined generally as one that is eligible for inclusion in the NRHP because of its association with cultural practices or beliefs of a living community that: (a) are rooted in that community's history; and (b) are important in maintaining the continuing cultural identity of the community.

State Significance Criteria

In considering impact significance under CEQA, the significance of the resource itself must first be determined. At the state level, consideration of significance as a "historical resource" is measured by cultural resource provisions considered under CEQA Sections 15064.5 and 15126.4, and the criteria regarding resource eligibility to the CRHR.

Generally, under CEQA, a historical resource (these include built-environment historic and prehistoric archaeological resources) is considered significant if it meets the criteria for listing on the CRHR. These criteria are set forth in CEQA Section 15064.5, and defined as any resource that:

(a) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
(b) Is associated with lives of persons important in our past;
(c) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
(d) Has yielded, or may be likely to yield, information important in prehistory or history.

Section 15064.5 of CEQA also assigns special importance to human remains and specifies procedures to be used when Native American remains are discovered. These procedures are detailed under California PRC Section 5097.98.

"Unique" archaeological resources are also considered under CEQA, as described under PRC 21083.2. A unique archaeological resource implies an archaeological artifact, object, or site about which it can be clearly demonstrated that—without merely adding to the current body of knowledge—there is a high probability that it meets one of the following criteria:

(a) The archaeological artifact, object, or site contains information needed to answer important scientific questions, and there is a demonstrable public interest in that information;
(b) The archaeological artifact, object, or site has a special and particular quality, such as being the oldest of its type or the best available example of its type; or
(c) The archaeological artifact, object, or site is directly associated with a scientifically recognized important prehistoric or historic event or person.

A nonunique archaeological resource indicates an archaeological artifact, object, or site that does not meet the above criteria. Impacts to nonunique archaeological resources and resources which do not qualify for listing on the CRHR receive no further consideration under CEQA.

Conformity of Federal and State Evaluation Criteria

The criteria for eligibility for the CRHR are very similar to those that qualify a property for the NRHP.

A property that is eligible for the NRHP is also eligible for the CRHR. All potential impacts to significant resources for projects where there is federal agency involvement must be assessed and addressed under the procedures of Section 106 of the NHPA, set forth at 36 CFR 800. All resources, with the exception of isolate artifacts and isolate features that appear to lack integrity or data potential, will be evaluated for significance.

3.8.3 Impact Evaluation

This impact evaluation assesses the potential for the project to affect the historic architectural properties and resources and archaeological resources identified in Section 3.8.2 under applicable federal and state laws. The evaluation complies with Section 106 of the NHPA of 1966, as amended, by applying the Criteria of Adverse Effect, set forth in Title 36 CFR, Part 800.5, and following the guidelines for documentation in 36 CFR 800.11, as they pertain to historic properties and archaeological resources in the project APE. The analysis also satisfies the CEQA requirement that California public agencies identify the significant environmental impacts of their actions as they pertain to historical resources. The CEQA assessment has been prepared in compliance with Section 15064.5(a)-(b) of the CEQA Guidelines, using

the criteria outlined in Section 5024.1 of the California PRC. The impacts analysis includes recommendations to avoid, minimize, or mitigate the identified impacts.

The criteria for determining an adverse effect under Section 106 are applied to assess what impacts an undertaking would have on the historic integrity of a historic property, and how an undertaking would affect those features of a historic property that contribute to its eligibility for listing in the NRHP. Similarly, the criteria of significant impacts to historic resources under CEQA are applied to assess a project's impacts on the historic integrity of a historical resource, and whether the project impacts would materially impair the historical significance of the resource. Under both sets of criteria, effects can be direct, indirect, and cumulative. Direct effects include such actions as physical destruction or damage. Indirect effects include the introduction of visual, auditory, or vibration impacts, as well as neglect of a historic property. Cumulative effects are the impacts of the project taken into account with known past or present projects, along with foreseeable future projects.

Definition of Effect and Criteria of Adverse Effect under Section 106

Section 106 regulations state that if there are historic properties in the APE that may be affected by a federal undertaking, the agency official shall assess adverse effects, if any, in accordance with the Criteria of Adverse Effect defined in 36 CFR 800.5. The definition of *effect* in that section states: "*Effect* means alteration to the characteristics of a historic property qualifying it for inclusion in or eligibility for the National Register." An *adverse effect* occurs "when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association . . . Adverse effects may include reasonably foreseeable effects caused by the undertaking that may occur later in time, be farther removed in distance, or be cumulative."[6] Examples of adverse effects may include, but are not limited to, the following (36 CFR 800.5[a][2])[i through vii]:

i. Physical destruction of or damage to all or part of the property;

ii. Alteration of a property, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation, and provision of handicapped access, that is not consistent with the *Secretary's Standards for the Treatment of Historic Properties* (36 CFR Part 68) and applicable guidelines;

iii. Removal of property from its historic location;

iv. Change of the character of the property's use or of physical features within the property's setting that contributes to its historic significance;

v. Introduction of visual, atmospheric, or audible elements that diminish the integrity of the property's significant historic features;

vi. Neglect of a property that causes its deterioration, except where such neglect and deterioration are recognized qualities of a property of religious and cultural significance to an Indian tribe or Native Hawaiian organization; and

vii. Transfer, lease, or sale of property out of federal ownership or control without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property's historic significance.

[6] 36 CFR 800.5(a)(1).

Definition and Criteria of Significant Impacts to Historic Resources under CEQA

The CEQA Guidelines, Title 14, California Code of Regulations, Chapter 3, beginning with Section 15064.5(b), define significant impacts for historical resources as follows:

(1) Substantial adverse change in the significance of an historical resource means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired.

(2) The significance of an historical resource is materially impaired when a project:

(A) Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the CRHR; or

(B) Demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources pursuant to Section 5020.1(k) of the PRC or its identification in an historical resources survey meeting the requirements of Section 5024.1(g) of the PRC, unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or

(C) Demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its eligibility for inclusion in the CRHR as determined by a lead agency for purposes of CEQA.

Therefore, the analysis of impacts to historic architectural and archaeological resources considered whether the project would result in:

- A substantial adverse change in the significance of an archaeological resource (prehistoric or historic) that is either listed or eligible for listing on the NRHP, the CRHR, a local register of historic resources, or is considered a unique archaeological resource;
- Disturbance of any human remains (prehistoric or historic), including those interred outside of formal cemeteries; or
- A substantial adverse change in the significance of an historic architectural resource that is either listed or eligible for listing on the NRHP, the CRHR, or a local register of historic resources.

Paleontological Resources

Paleontological resources, or fossils, have not been previously identified in the project area. However, the Young Bay Mud, Merritt Sand, and Old Bay Mud in project area are potentially sensitive for paleontological resources.

Based on the details of project construction, this section provides an assessment of the potential for the project to impact significant paleontological resources. The analysis is conducted consistent with the standards and guidelines recommended for the assessment and mitigation of impacts to paleontological resources recommended by the Society of Vertebrate Paleontology (SVP, 1995).

Therefore, the analysis of impacts to paleontological resources considers whether the project would result in disturbance or destruction of a sensitive and/or unique paleontological resource or site.

Direct Impacts

Those impacts (operational as well as construction-related) resulting in the disturbance or destruction of a cultural or paleontological resource would be considered a direct impact, because the effect would be permanent.

Impact 3.8-1: Substantial Adverse Change to NRHP and/or CRHR Listed, or Eligible to Be Listed, or Unique Archaeological Resources

No Action Alternative

Under the No Action Alternative, no modifications would be made to the existing Downtown San Francisco Ferry Terminal (Ferry Terminal) facilities to accommodate new or existing WETA services. Therefore, the No Action Alternative would have no effect or impact to NRHP and/or CRHR Listed, or Eligible to be Listed, or Unique Archaeological Resources.

Action Alternative

Implementation of the proposed project would include activities that would disturb the sediments in the project area, potentially affecting archaeological resources in the Archaeological APE. Sediment-disturbing activities would include initial dredging during construction; periodic maintenance dredging; pile demolition and removal; and pile installation. There are no recorded archaeological resources—NRHP and/or CRHR listed or eligible, unique, or otherwise—in the Archaeological APE for the project. Therefore, the proposed project would have no impact on known archaeological resources.

Because dredging and other disturbances have occurred in the Archaeological APE historically, and considering that the previous archaeological investigations in the immediate vicinity did not identify any resources, it is unlikely that previously unidentified archaeological resources are present in the Archaeological APE. However, there remains the potential that previously unidentified archaeological materials could be inadvertently uncovered by project activities. Such inadvertently discovered archaeological sites could represent NRHP and/or CRHR eligible or unique archaeological resources, and their disturbance could adversely change their condition. Therefore, the inadvertent discovery of archaeological materials represents a potential project impact. Implementation of Mitigation Measure CUL-1, Inadvertent Discovery Measures, would reduce potential impacts to archaeological material by identifying the procedures to be followed in the event that archaeological resources are exposed during project implementation.

Pursuant to Section 106 of the NHPA, FTA concluded that this undertaking would have no effect on archaeological resources. SHPO concurred with this determination on April 15, 2013 (refer to Appendix D).

NEPA Determination. The inadvertent discovery of archaeological materials during project activities represents a potential adverse impact; however; with implementation of Mitigation Measure CUL-1, the potential for impacts would be reduced and would not be adverse.

CEQA Determination. The inadvertent discovery of archaeological materials during project activities represents a potential project impact; however; implementation of Mitigation Measure CUL-1 would reduce the project's potential to result in impacts to archaeological resources to a less-than-significant level.

Impact 3.8-2: Disturbance of Human Remains, Including those Interred Outside of a Formal Cemetery

No Action Alternative

Under the No Action Alternative, no modifications would be made to the existing Ferry Terminal facilities to accommodate new or existing WETA services. Therefore, the No Action Alternative would have no effect or impact to human remains, including those interred outside of formal cemeteries.

Action Alternative

Implementation of the proposed project includes sediment-disturbing activities, which have the potential to disturb human remains interred outside of formal cemeteries. There are no known cemeteries—formal or otherwise—or other evidence of human internment in the Archaeological APE for the project. Although it is unlikely, given the repeated dredging and other disturbances that have occurred in the sediments in the Archaeological APE, there remains the potential that previously unidentified human remains could be inadvertently uncovered with project implementation. Such disturbance of human remains represents a potential project impact. Implementation of Mitigation Measure CUL-1, Inadvertent Discovery Measures, and Mitigation Measure CUL-2, Treatment of Human Remains, would reduce potential impacts due to disturbance of human remains, by identifying the procedures to be followed in the event that human remains are inadvertently exposed during project implementation.

NEPA Determination. The inadvertent disturbance of human remains during construction represents a potential adverse impact; however, with implementation of Mitigation Measures CUL-1 and CUL-2, the potential for impacts would be reduced and would not be adverse.

CEQA Determination. The inadvertent disturbance of human remains during construction represents a potential project impact; however, implementation of Mitigation Measures CUL-1 and CUL-2 would reduce the project's potential to result in impacts to human remains to a less-than-significant level.

Impact 3.8-3: Cause a Direct Adverse Effect or Impact to Historic Properties or Resources

No Action Alternative

Under the No Action Alternative, no modifications would be made to the existing Ferry Terminal facilities to accommodate new or existing WETA services. Therefore, the No Action Alternative would have no effect or impact on historical properties or resources.

Action Alternative

There is one element of the proposed project that would directly affect historic properties or resources. This element involves the potential replacement of wood fendering along the southern edge of Pier 1, as indicated on Figure 2-2.

As described in Section 2.3.2, the existing fendering along the southern edge of Pier 1 in the North Basin could be removed and replaced. This would require the removal of 33 wood piles along the southern side of Pier 1 (see Figure 3.8-6), which would be replaced with 330 linear feet of "chock block" fendering, with 33 new 14-inch-diameter wood piles. Pier 1 is individually listed on the National Register, and contributes to the Embarcadero Historic District and to the Central Embarcadero Piers Historic District, both of which partially overlap the Focused Architectural APE for this project. The pilings that are subject to removal have been identified as original to the building, and contribute to the significance of the property (Page & Turnbull, 2002). Their removal, therefore, has the potential to cause an adverse

effect/significant impact to the historic property or resource. WETA has not yet determined whether replacement of the fendering would be required to safely operate vessels at the new Gate A. During the Final design of the project, the existing fendering along the southern edge of Pier 1 would be inspected to determine whether replacement is necessary. In the event that it is determined that the fendering would require replacement, Mitigation Measure CUL-3, Replacement in Accordance with Secretary of the Interior's Standards for Rehabilitation, would be implemented. This measure requires that replacement of the fendering be constructed in a manner consistent with the *Secretary of the Interior's Standards for the Treatment of Historic Properties, Standards for Rehabilitation* (NPS, 2001). Implementation of this mitigation measure, should the fendering require replacement, would reduce potential adverse effects; therefore, project effects would not be adverse.

All other construction is occurring outside the boundaries of the historic properties or resources that are in or partially in the Focused Architectural APE, except where the project would connect to the historic bulkhead wharf. The boundaries of the Embarcadero Historic District and the Central Embarcadero Piers Historic District encompass only the elements that contribute to the districts, and generally exclude noncontributing features. In the project area, these noncontributing features include Pier 2 and the Ferry Plaza, and portions of the bulkhead wharf built after the end of the two districts' respective periods of significance. The boundaries of the three buildings that are individually listed in the NRHP and CRHR (the Ferry Building, the Agriculture Building, and Pier 1) are also defined by the footprint of each building (which in the case of Pier 1 also includes the extent of the pier substructure) (Figure 3.8-3). The construction zone encompasses areas currently occupied by Pier 2, as well as noncontributing portions of the bulkhead wharf. As described in Table 2-2, the proposed project would include resurfacing an area of decking immediately west of the existing water basin between the Ferry Building and the Agriculture Building. Some of this pavement would be situated atop a contributing section of bulkhead wharf west of the line between the west-facing façades of the Ferry Building and the Agriculture Building, as depicted on Figure 3.8-5. The existing surfacing in this area is nonhistoric; it was installed after the end of the period of significance, and does not contribute to the significance of the resource (Corbett et al., 2006, Section 7:57). Because these construction or demolition activities would not—with the aforementioned exception of the possible fendering removal at Pier 1—damage, destroy, or otherwise alter, in whole or in part, contributing or individually eligible historic properties or resources, the project would not cause a direct adverse effect or significant impact to historic properties or resources.

There are, however, several historic properties and resources very near the planned construction activities. Because inadvertent damage to these historic properties or resources would be adverse and potentially significant, the undertaking would apply measures to avoid and minimize this effect. Implementation of Mitigation Measure CUL-4 requires demarcation of the construction zone, to reduce the potential for inadvertent damage; and implementation of a response and repair plan, should any inadvertent damage occur during construction. This measure would avoid and minimize potential adverse effects; therefore, project effects would not be adverse.

None of the historic properties are federal property, and the project does not constitute the transfer, lease, or sale of property out of federal ownership. Therefore, the undertaking would not constitute an adverse effect under this criterion, nor would it cause a significant impact. Finally, the project would not cause neglect to or change the use or location of a historic property, and so would not cause an adverse effect or a significant impact.

Pursuant to Section 106 of the NHPA, FTA concluded that this undertaking, with the implementation of proposed mitigation measures, would have no adverse effect on historic properties (also refer to Impact 3.8-5). SHPO concurred with this determination on April 15, 2013 (refer to Appendix D).

NEPA Determination. Should it be determined that the fendering along Pier 1 requires replacement, the project could directly affect historic properties or resources in the Focused Architectural APE. Implementation of Mitigation Measures CUL-3 and CUL-4 require application of measures during construction to avoid inadvertent damage; implementation of a response and repair plan, should any inadvertent damage occur during construction; and replacement of the fendering along Pier 1, in a manner consistent with the *Secretary of the Interior's Standards for the Treatment of Historic Properties, Standards for Rehabilitation* (NPS, 2001). With implementation of these mitigation measures, impacts would be reduced and would result in no adverse effect.

CEQA Determination. Direct impacts to historic properties or resources in the Focused Architectural APE would be potentially significant, should it be determined that the fendering along Pier 1 requires replacement. Implementation of Mitigation Measures CUL-3 and CUL-4 require application of measures during construction to avoid inadvertent damage; implementation of a response and repair plan, should any inadvertent damage occur during construction; and replacement of the fendering along Pier 1, in a manner consistent with the *Secretary of the Interior's Standards for the Treatment of Historic Properties, Standards for Rehabilitation* (NPS, 2001). These measures would reduce potential impacts to a less-than-significant level.

Impact 3.8-4: Adverse Effects to Unidentified Significant Paleontological Resources

No Action Alternative

Under the No Action Alternative, no modifications would be made to the existing Ferry Terminal facilities to accommodate new or expanded WETA services. Therefore, the No Action Alternative would have no impacts to paleontological resources.

Action Alternative

Implementation of the proposed project would include activities that would disturb the sediments in the project area, potentially affecting paleontological resources. Sediment-disturbing activities would include initial dredging during construction; periodic maintenance dredging; pile demolition and removal; and pile installation. No paleontological resources have been previously identified in the project area; however, there are previously recorded fossil sites nearby, and the project area is therefore considered potentially sensitive for paleontological resources. As proposed, the project would require the installation of piles though the Young Bay Mud and into the underlying Merritt Sand and Old Bay Mud. No elements of the project would extend to the depth of the underlying bedrock. Dredging would be less likely to impact paleontological resources, based on the limited depth of dredging (to 14 feet below mean lower low water), and because the area has been previously disturbed by historic dredging and vessel traffic. Implementation of Mitigation Measure CUL-5 would reduce potential impacts to unknown significant paleontological resources, by halting work within 50 feet of sediment-disturbing activities if buried paleontological resources are discovered during construction. A qualified paleontologist could then document the discovery as needed, evaluate the potential resource, assess the significance of the find, and determine how to mitigate the potentials effects, as necessary.

NEPA Determination. The project has the potential to adversely impact paleontological resources. With the implementation of Mitigation Measure CUL-5, the potential for impacts would be reduced and would not be adverse.

CEQA Determination. With implementation of proposed Mitigation Measure CUL-5, the project's potential to result in impacts to paleontological resources would be reduced to a less-than-significant level.

Indirect Impacts

Impact 3.8-5: Potential Indirect Effects of Visual or Noise and Vibration Elements on Historic Properties or Resources

No Action Alternative

Under the No Action Alternative, no modifications would be made to the existing Ferry Terminal facilities to accommodate new or expanded WETA services. Therefore, the No Action Alternative would have no indirect effects on historic properties or resources.

Action Alternative

The proposed project elements and project construction activities have the potential to indirectly impact historic properties in the Focused Architectural APE. The potential visual or noise and vibration effects are discussed below.

Visual

For additional information, also refer to Section 3.10, Aesthetics and Visual Resources.

The proposed project would introduce nonhistoric visual elements to the immediate surroundings of two listed historic districts, and to three individually listed buildings. However, the visual presence of these new project elements would not contrast with the scale or existing visual context of the area, and would be consistent with historic water transportation uses of area. Introduction of these new project features would not cause an adverse effect or significant impact to historic properties or resources, as discussed below.

The project area is between Pier 1 and Pier 14, The Embarcadero, and San Francisco Bay (see Figure 1-1). The Embarcadero extends for 3 miles along the waterfront, and includes a considerable variety of use and urban forms on the land side of the district. Generally, the waterfront side of the district comprises bulkhead buildings and piers, with maritime and other uses, parking areas, and open spaces. The new visual features of the proposed project (gates, berthing structures, weather canopies) would be consistent with the existing visual elements, and would be in or along the water basins between Piers 1 and 14. From the east, the project area can be seen from Treasure Island, Yerba Buena Island, and from the upper deck of the Bay Bridge, as well as from boats on San Francisco Bay. These views from the east encompass the piers and commercial structures on both sides of the Ferry Building, whose clock tower visibly punctuates the low San Francisco skyline. The views from this perspective are framed by the Agriculture Building and the Pier 14 breakwater on the south, and Pier 1 on the north, visually enclosing the North and South Basins that house the water transit gates (existing and proposed). From The Embarcadero on the west, views of the project site contain the visual elements of the Ferry Building, which serves as the visual focal point; the Agriculture Building; and Sinbad's Restaurant (on Pier 2). These buildings, as well as smaller-scale elements such as signs, lamp posts, streetscape decorative features, street trees, and pedestrian and transit facilities, obstruct some of the views to the water side of the project site.

The Port's design guidelines promote aesthetic planning criteria that guide the initial development of projects in a manner consistent with preservation of views and scenic resources. The preliminary design of the project improvements has been developed taking into consideration compatibility with the surrounding visual environment, as well as the nearby historic properties. Generally, the Focused Architectural APE is characterized by a mixture of historically significant bulkhead buildings and piers (the Ferry Building, the Agriculture Building, and Pier 1), modern buildings and structures (the Ferry Plaza, the ferry canopies and gates, and Sinbad's Restaurant), and parking areas and other open spaces.

The historic buildings are situated with their principal façades facing west onto The Embarcadero, while the modern buildings and structures are on the east or San Francisco Bay side of the Focused Architectural APE.

The new vertical project elements consist of gates, berthing structures, railings, lighting, and weather protection canopies. Most of the proposed new visual features included in the preliminary design would be placed on the San Francisco Bay side, in or along the water basins between Piers 1 and 14, outside of the boundaries of any listed historic district or individual building, in an area that is composed almost entirely of modern buildings and structures (built in the 1970s and later). The proposed project elements have been designed to be consistent with the scale, visual quality, and visual context of the existing landscape (see Figures 2-5 and 2-6), which is a built environment consisting of a mix of historic and modern elements. The proposed new gates (Gates A, F, and G) would be placed adjacent to the existing gates (Gates B and E), and would be similar in terms of height, scale, color, material, and texture (though the new gates would have slightly wider door openings). The float and access pier for proposed Gate A, in the North Basin, would be placed in the former location of the noncontributing Pier ½ (which has recently been demolished). Gates F and G, in the South Basin, would be constructed between existing Gate E and Pier 14.

Three weather protection canopies are also included in the project's preliminary design. The weather protection canopies would have a uniform look throughout the project area. They would be approximately 20 feet wide and 18 to 20 feet high; constructed of steel and glass; and could include photovoltaic cells (see Figure 3.8-7). One weather protection canopy would be constructed along the Gate A Access Pier. A similar canopy would be placed on the existing access pier along the north side of the Ferry Building. In the South Basin, an extension of the East Bayside Promenade—also topped with a photovoltaic canopy—would replace the existing, noncontributing Pier 2 and Sinbad's Restaurant.

Because of their low vertical profiles, light massing, and glass features, the visual impact of these project elements would be minimal, particularly when compared to the overall scale of the Ferry Building, Pier 1, and the Agriculture Building, as shown on Figures 3.8-7 through 3.8-10. The tallest features—the weather protection canopies and gates—would stand no higher than 20 feet, far below the heights of the adjacent buildings. The canopies, gates, and other project features would be visually subordinate to these historic properties. The placement and profiles of the gates and canopies are low enough that sightlines to the historic properties from various vantage points on the water side (such as at the ends of Piers 1 or Pier 14, or from the Ferry Plaza) would be either unimpeded or only partially obscured. Sightlines toward the principal façades of the Ferry Building, Agriculture Building, and Pier 1 from The Embarcadero would be unaffected. Additionally, although the proposed canopies, gates, piers, and decking would result in a slight net increase in visual bulk within the Focused Architectural APE, several of these project elements would replace existing visual clutter, namely noncontributing Pier 2 and Sinbad's Restaurant.

Additionally, the introduction of new visual elements would not adversely affect or significantly impact the historic properties or resources, because the surrounding setting and historic views—especially on the water side, where most of the project work would occur—have been fundamentally altered since the ends of their respective periods of significance, the latest of which was in 1952.[7] From a historical perspective, the water side of the project area bears little resemblance to the first half of the twentieth century, the period in which all of the listed properties achieved significance. In fact, this is the reason that the boundaries of the Embarcadero Historic District, Central Embarcadero Piers Historic District, and

[7] As shown in Table 3.8-3, the periods of significance for the Embarcadero Historic District and the Central Embarcadero Piers Historic District end in 1946 and 1952, respectively. The periods of significance of the individual buildings range from 1925 (Agriculture Building) to 1946 (Ferry Building).

individually listed buildings in the Focused Architectural APE were drawn to capture the elements that contribute to the historic significance, and to exclude the elements that do not.

As shown on Figure 3.8-11, the Bayside elements in the project area have been changed many times. First, many of the original ferry slips were removed; and then, in 1971, the Bay Area Rapid Transit (BART) Ferry Plaza Platform and Transition Structure were constructed as part of the Transbay Tube connection to the East Bay. This new platform (i.e., the Ferry Plaza) then became the location for the Golden Gate Ferry Terminal.

The effects of these nonhistoric developments on the historic setting surrounding the project area are substantial, as evidenced in a comparison of similar oblique aerial views from the 1950s and 2000s (Figure 3.8-12). The visual character that existed on the waterfront during the period of significance has been diminished with the removal or alteration of several major elements present at that time, and also through introduction of new elements. Gone are the distinctive, nose-in ferry slips that dominated the waterfront during the first half of the twentieth century, as are original Pier 14 bulkhead and wharf structure. In their places are several modern constructions: Gate B, which projects into the North Basin from the northeastern corner of the Ferry Building; the Ferry Plaza, including the Transition Structure, Golden Gate Ferry Terminal, and Gates C and D; Pier 2, which includes the Sinbad's Restaurant building and Gate E; and the modern Pier 14, a municipal pier and breakwater. Additionally, the eastern façade of the Ferry Building, which faces the waterfront, has been completely modified since its period of significance. Beginning in 1998 and completed in 2003, the Ferry Building was renovated and redeveloped as a mixed-use property. The project was certified by the National Park Service as being consistent with the Secretary of the Interior's Standards for the Treatment of Historic Properties. Although the renovation effort restored many original features and removed other historically unsympathetic materials and design elements, thereby returning the building to a closer approximation of its original appearance, it also added new elements to the eastern façade. Also, a new, 30-foot-wide wharf for pedestrian foot traffic was added to the foot of the Ferry Building on the eastern façade.

The introduction of the proposed small-scale, low-profile project elements would not cause an adverse effect to historic properties or resources because most of the proposed features would be placed on the San Francisco Bay side of the Architectural APE and outside of the boundaries of the historic properties. As discussed above, this is an area where modern development has already compromised the integrity of the historic setting. For these reasons, the project as proposed under the preliminary design would not cause an adverse effect to historic properties or resources in either the Architectural APE or Focused Architectural APE.

Assessment of the preliminary design does not indicate that an adverse effect is likely; however, a mitigation measure has been developed to ensure that the final design of project features directly adjacent to historic properties and not located within the water basins (i.e., weather protection canopies) would also avoid indirect adverse effects to adjacent to historic properties.

Mitigation Measure CUL-6 requires that final design of the weather protection canopies be developed in consultation with the Port Waterfront Advisory Design Committee and the San Francisco Historic Preservation Commission, and consistent with the *Secretary of the Interior's Standards for the Treatment of Historic Properties, Standards for Rehabilitation* (NPS, 2001). Although adverse impacts are not anticipated based on the preliminary design, implementation of Mitigation Measure CUL-6 would ensure that indirect adverse visual effects or significant impacts from the final design of the weather protection canopy element of the proposed project are avoided for all of the four historic properties in the Focused Architectural APE. The consultation and application of the Secretary of the Interior's Standards would ensure that historic integrity is retained, and that the properties would remain eligible for listing in the NRHP and CRHR; therefore, the project would have no adverse effect.

Noise and Vibration

For additional details of the noise and vibration analysis, including the applicable analysis assumption, thresholds, and potential impacts, refer to Section 3.7, Noise and Vibration.

The analysis presented in Section 3.7 found that the potential noise and vibration impacts from project operations would not be expected to exceed thresholds that may cause indirect adverse effects or significant impacts to historic properties or resources. Therefore, noise and vibration impacts from project operation would not constitute an adverse effect or significant impact to historic properties or resources.

The noise caused by construction activities would not cause indirect adverse effects or significant impacts to historic properties or resources, because it would not permanently diminish their historic integrity.

The analysis did, however, find that groundborne vibration from project construction activities could exceed vibration thresholds for potential structure damage (Impact 3.7-5). Although groundborne vibration does not often reach the levels that can damage structures, the FTA cautions that care must be taken to avoid damage to old, fragile, or historically significant buildings, where high-vibration construction activities have the potential to cause damage. The four buildings and structures in the APE that have been identified as historic properties or resources are the Ferry Building, the Agriculture Building, Pier 1, and the seawall. The FTA provides consideration for buildings and structures in Chapter 12 of its *Transit Noise and Vibration Impact Assessment* (FTA, 2006). Applying the FTA Construction Vibration Damage Criteria for building types, each building and structure has been categorized as Building Category II: engineered concrete and masonry (no plaster) (FTA, 2006: Table 12-3).

Using FTA criteria for vibration levels that have the potential to cause structural damage to buildings (FTA, 2006: Table 12-3), and for vibration source levels for different types of construction equipment (e.g., pile drivers and bulldozers), the vibration analysis determined the distance from each building type where construction could exceed the FTA thresholds. The analysis concluded that vibration from proposed project construction activities has the potential to result in damage to the individual historic properties or resources, as follows:

- The Ferry Building (Building Category II) is 30 feet from the closest point of the construction zone. The analysis determined that when pile driving occurs within 73 feet (for impact pile driving) and 45 feet (for vibratory pile driving) of the Ferry Building, the pile driving has the potential to cause vibrations that would exceed the FTA thresholds of 0.3 peak particle velocity (PPV) for potential damage to the Category II building.

- Pier 1 (Building Category II) is 25 feet from the closest point of the construction zone. The analysis determined that when pile driving occurs within 73 feet (for impact pile driving) and 45 feet (for vibratory pile driving) of the Ferry Building, the pile driving has the potential to cause vibrations that would exceed the FTA thresholds for potential damage to the Category II building (0.3 PPV).

- The seawall (Building Category II) is in the construction zone. If any of the construction equipment listed in Table 3.7-13 is operated within the distances presented in Table 3.7-13, there is the potential to cause vibrations that would exceed the FTA thresholds for potential damage to the Category II structure (0.3 PPV).

- The Agriculture Building (Building Category II) is 5 feet from the closest point of the construction zone, and 17 feet from the nearest pile driving. If any of the construction equipment listed in Table 3.7-13—with the exception of a small bulldozer—is operated within the distances presented in

Table 3.7-13, there is the potential to cause vibrations that would exceed the FTA thresholds for potential damage to the Category II building (0.3 PPV).

Mitigation Measures NOISE-3 and NOISE-4, presented in Section 3.7, would reduce vibration from construction activities that could result in structural damage. These measures require that appropriate pile-driving techniques be selected, based on the distance from existing buildings; that vibration monitoring be conducted during construction; and that work be ceased and corrective measures or alternative construction methods be implemented should vibration monitoring indicate that the threshold would be exceeded. Therefore, implementation of Mitigation Measures NOISE-3 and NOISE-4 would avoid indirect adverse effects or significant impacts to each of the four historic properties or resources in the Focused Architectural APE.

Pursuant to Section 106 of the NHPA, FTA concluded that this undertaking, with the implementation of proposed mitigation measures, would have no adverse effect on historic properties. SHPO concurred with this determination on April 15, 2013 (refer to Appendix D).

NEPA Determination. There is potential for the design of the project's weather protection canopies to adversely affect the adjacent historic properties in the Focused Architectural APE. With implementation of Mitigation Measure CUL-6, indirect adverse visual effects from the final design of the weather protection canopy element of the proposed project would be avoided, and the project would result in no adverse effect.

There is a potential that vibration from construction could adversely affect the historic properties or resources in the Focused Architectural APE. These potential effects would be avoided by implementing Mitigation Measures NOISE-3 and NOISE-4. Therefore, the project would result in no adverse effect.

CEQA Determination. There is potential for the design of the project's weather protection canopies to significantly impact the adjacent historic properties in the Focused Architectural APE. With implementation of Mitigation Measure CUL-6, indirect adverse visual effects from the final design of the weather protection canopy element of the proposed project would be avoided, and project impacts would be less than significant.

There is a potential that vibration from construction could indirectly affect the historic properties or resources in the Focused Architectural APE. These potential effects would be avoided by implementing Mitigation Measures NOISE-3 and NOISE-4. Therefore, impacts would be less than significant with mitigation incorporated.

Construction Impacts

Given the nature of cultural and paleontological resources, there are no construction impacts. All construction impacts are considered direct or indirect, and permanent. As such, construction impacts are addressed above under Direct and Indirect Impacts.

Cumulative Impacts

Impact 3.8-6: Potential to Result in Cumulative Impacts on Archaeological Resources

Project implementation would not result in impacts to known NRHP- and/or CRHR-listed or eligible or unique archaeological resources. The project could result in the inadvertent discovery of a buried archaeological resource or buried human remains. The other projects shown in Table 3.1-1 would also have the potential to inadvertently uncover previously unidentified buried archaeological resources or buried human remains.

If previously undiscovered archaeological resources are inadvertently exposed during construction activities, an incremental effect to archaeological resources may occur. However, the proposed project and the other planned future projects in the project vicinity, including those in areas administered by the Port—which are subject to CEQA-level environmental review—would be required to consider mitigation for impacts to historical or unique archaeological resources. If these resources are properly evaluated and managed according to mitigation measures, no adverse cumulative impact to archaeological resources is expected to occur.

NEPA Determination. The project would not contribute to cumulative adverse impacts to archaeological resources.

CEQA Determination. Cumulative impacts to archaeological resources would be less than significant.

Impact 3.8-7. Potential to Result in Cumulative Impacts on Historic Properties

The proposed project has the potential to directly and indirectly affect historic properties or resources in the Focused Architectural APE. Should it be determined that the fendering along Pier 1, a historic resource, needs to be replaced, the proposed project could directly affect a historic property. In addition, the Focused Architectural APE includes four historic resources and two overlapping historic districts. Vibration from construction activities has the potential to affect the historic resources in the project area. In addition, the introduction of the new project elements has the potential to visually affect the adjacent historic buildings and historic districts. There are four other known ongoing and future projects that could have a potential to affect the historic properties and resources within the Focused Architectural APE as well: the America's Cup Project; Golden Gate Transit Ferry Terminal Improvements; BART Ferry Plaza Physical Barrier Project; and Agriculture Building Rehabilitation and Seismic Upgrades. The America's Cup Project components in the project area would result in the removal of existing deck and pile structures, and of the restaurant on Pier 2 (none of which are historic properties or historical resources). In addition, the America's Cup Project could involve other temporary uses, such as addition of boats and temporary berthing facilities along the northern waterfront. These changes are not anticipated to affect historic properties or resources. The Golden Gate Transit Ferry Terminal Improvements, which would occur at Golden Gate Transit's gates in the project area, are intended to upgrade accessibility. At this time, environmental review has not been initiated on this project, but the upgrade is anticipated to be minor in scope, and is not anticipated to result in significant changes in the area. The BART Ferry Plaza Physical Barrier Project involves the construction of surface security features around BART's facilities on the Ferry Plaza, which are not historic properties or within the boundaries of the historic district. The project is minor in scope and is not expected to result in significant visual changes to the area. The Agriculture Building Rehabilitation has also not initiated environmental review or design. At the time this project is defined, a detailed environmental review would evaluate both the project's potential to affect the historic properties and districts in the project area, and the project's potential cumulative impacts. The proposed project has been designed so as to not interfere with the future rehabilitation of the Agriculture Building.

In addition, several past, present, and reasonably foreseeable future projects have affected properties and buildings within the Embarcadero Historic District (such as the demolition of Pier 36, or the development of the Exploratorium and Cruise Terminal). Each of these projects would be required, pursuant to Port Resolution 04-89, to be designed to the Secretary of the Interior's Standards. As described in the environmental analysis for each project, the modifications have been and would be required to be designed so as not to result in substantial or adverse impacts to the Historic District and its integrity.

Because the other reasonably foreseeable projects are not anticipated to have substantial impacts to historic properties or resources, and because the proposed project's potential effects on historic resources would be less than significant and not adverse with the implementation of mitigation measures identified

for the project, no cumulative adverse impacts to historic properties or resources along San Francisco's waterfront are anticipated.

NEPA Determination. The project would not contribute to cumulative adverse impacts to historic properties.

CEQA Determination. Cumulative impacts to historic properties would be less than significant.

Impact 3.8-8: Potential to Result in Cumulative Impacts on Paleontological Resources

Implementation of the proposed project would include activities that would disturb the sediments in the project area, potentially affecting paleontological resources. No paleontological resources have been previously identified in the project area; however, the general vicinity of the project is considered potentially sensitive for paleontological resources, and therefore paleontological resources could be uncovered during construction. The other projects shown on Table 3.1-1 would also have the potential to inadvertently uncover previously unidentified paleontological resources.

If previously undiscovered paleontological resources are inadvertently exposed during construction activities, an incremental effect to may occur. However, the proposed project and the other planned future projects in the project vicinity, including those in areas administered by the Port—which are subject to CEQA-level environmental review—would be required to consider mitigation for impacts to paleontological resources. If these resources are properly evaluated and managed according to mitigation measures, no adverse cumulative impact to paleontological resources is expected to occur.

NEPA Determination. The project would not contribute to cumulative adverse impacts to paleontological resources.

CEQA Determination. Cumulative impacts to paleontological resources would be less than significant.

3.8.4 Mitigation Measures

Mitigation Measure CUL-1: Inadvertent Discovery Measures

To avoid any potential adverse effect on inadvertently discovered NRHP- and/or CRHR-eligible or unique archaeological resources as defined in CEQA Guidelines Section 15064.5(a)(c), WETA will distribute an archaeological resource "ALERT" sheet to the project prime contractor, and to any project subcontractor firms involved in soil/sediment disturbing activities in the project site. The "ALERT" sheet will contain sufficient information to allow contractor personnel to identify conditions that may indicate the presence of archaeological resources. Prior to undertaking any soil-disturbing activities (i.e., dredging, pile installation), each contractor is responsible for ensuring that the "ALERT" sheet is circulated to all field personnel, including machine operators, field crew, pile drivers, and supervisory personnel. Should there be any indication of an archaeological resource—including, but not limited to, encountering fragments of bone, stone tools, midden soils, structural remains, ship remnants, or historic refuse—during any soil-disturbing activity of the project, WETA will immediately suspend any soil-disturbing activities in the vicinity of the discovery.

In the event of such a discovery, WETA will retain the services of a qualified archaeological consultant. The archaeological consultant will advise WETA as to whether the discovery is an archaeological resource that retains sufficient integrity, and is of potential scientific/historical/cultural significance. If an archaeological resource is present, the archaeological consultant will identify and evaluate the archaeological resource. The archaeological consultant will make a recommendation to WETA as to what action or additional measures, if any, are warranted, including coordination with appropriate agencies.

Measures might include preservation in situ of the archaeological resource; an archaeological monitoring program; or an archaeological evaluation program. If an archaeological resource cannot be avoided by project activities, the archaeologist will prepare an Archaeological Evaluation Plan (AEP). The AEP will create a program to determine the potential of the expected resource to meet the CRHR criteria—particularly Criterion 4, the resource's potential to address important research questions identified in the AEP—and the archaeologist will submit this plan to WETA for approval. The archaeologist will then conduct an evaluation consistent with the WETA-approved AEP. The methods and findings of the evaluation will be presented in an Archaeological Evaluation and Effects Report, which will be submitted to WETA for review on completion.

Mitigation Measure CUL-2: Treatment of Human Remains

The treatment of human remains and associated or unassociated funerary objects discovered during any soil-disturbing activity will comply with applicable state laws. In the event the discovery is composed entirely of, or includes, human skeletal remains, in addition to implementation of Mitigation Measure CUL-1, Inadvertent Discovery Measures, construction activities will immediately cease and WETA's project representative will immediately contact the San Francisco County coroner to evaluate the remains, following the procedures and protocols set forth in Section 15064.5 (e)(1) of the CEQA Guidelines. If the coroner determines that the remains are Native American, WETA will contact the NAHC, who will appoint a Most Likely Descendant (MLD), in accordance with Health and Safety Code Section 7050.5, subdivision (c), and PRC 5097.98 (as amended by AB 2641). In accordance with PRC 5097.98, WETA and the Port (as landowner/administrator) will ensure that, according to generally accepted cultural or archaeological standards or practices, the immediate vicinity of the Native American human remains is not damaged or disturbed by further development activity until WETA and the Port have discussed and conferred with the MLD, as prescribed in this section (PRC 5097.98), regarding their recommendations, if applicable, taking into account the possibility of multiple human remains. WETA, the Port, and the MLD will make all reasonable efforts to develop an agreement for the treatment, with appropriate dignity, of human remains and associated or unassociated funerary objects (CEQA Guidelines Sec. 15064.5[d]). The agreement should take into consideration the appropriate excavation, removal, recordation, analysis, custodianship, curation, and final disposition of the human remains and associated or unassociated funerary objects. PRC allows 48 hours to reach agreement on these matters. If the MLD and the other parties do not agree on the reburial method, the project will follow Section 5097.98(b) of the PRC, which states, "the landowner or his or her authorized representative will re-inter the human remains and items associated with Native American burials with appropriate dignity on the property in a location not subject to further subsurface disturbance."

Mitigation Measure CUL-3: Replacement in Accordance with Secretary of the Interior's Standards for Rehabilitation

If replacement of the existing pile fendering attached to the southern side of Pier 1 is deemed necessary, the replacement work will be conducted in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties* (NPS, 2001), specifically adhering to the Standards for Rehabilitation. Project compliance with the Secretary of the Interior's Standards and applicable guidelines will ensure that Pier 1 retains sufficient historic integrity to convey its significance for listing in the NRHP and CRHR, therefore avoiding and minimizing the adverse effect or significant impact potentially caused by this undertaking.

When replacing the pile fendering on the southern side of the building, in-kind replacement materials will be used to the greatest extent feasible. The replacement timber pilings will have a diameter similar to that of the original pilings. The number of replacement pilings will match the number of pilings being removed (33), and the new pilings will be spaced similarly to the originals. The selection of replacement pilings should include input and review from an architectural historian who meets the Secretary of the Interior's Professional Qualification Standards (as defined in 36 CFR, Part 61). The project's compliance

with the Standards for Rehabilitation will result in Pier 1 retaining integrity of design, workmanship, materials, feeling, association, and location. Although the project will result overall in some diminished integrity of material, the elements that comprise the building's significant form, plan, and design, illustrating its important historic function and aesthetic value, will be retained; and the impact would be avoided and minimized.

Mitigation Measure CUL-4: Plan for Protection Against, and Response to, Inadvertent Damage

Protection and Monitoring to Avoid Effects. To avoid and minimize adverse effects that would inadvertently cause damage to historic properties during project construction activities, the project construction zone will be clearly delineated using orange construction fencing or other similar suitable materials, and designated as a restricted area. Mitigation Measure NOISE-3 would also help reduce this impact.

Response to and Repair of Inadvertent Damage. Should project actions cause inadvertent damage to historic properties, project work will cease, and the response plan prepared prior to construction for repair of damage will be implemented. The plan and response will include input and review from an architectural historian who meets the Secretary of the Interior's Professional Qualification Standards (as defined in 36 CFR, Part 61). Inadvertent damage to the historic properties resulting from the project will be repaired in accordance with the Secretary of the Interior's *Standards for Rehabilitation*. The response plan will include photographic documentation of the condition of the portions of historic properties prior to project implementation, to establish the baseline condition for assessing damage. Prior to implementation, WETA will provide the plans for any repairs to SHPO for review and comment, to ensure conformance with the Secretary of the Interior's *Standards for Rehabilitation*.

Mitigation Measure CUL-5: Stop Construction if Buried Paleontological Resources Are Discovered

In the event that paleontological resources are discovered during construction, sediment-disturbing activities within 50 feet of the find will be temporarily halted or diverted until the discovery is examined by a qualified paleontologist (in accordance with Society of Vertebrate Paleontology standards). The paleontologist will document the discovery as needed, evaluate the potential resource, and assess the significance of the find under the criteria set forth in CEQA Guidelines Section 15064.5. The paleontologist will notify the appropriate agencies to determine procedures that would be followed before construction is allowed to resume at the location of the find. If the project proponent determines that avoidance is not feasible, the paleontologist will prepare a salvage plan in accordance with the SVP and CEQA Guidelines for mitigating the effect of the project on the qualities that make the resource important. The plan will be submitted to WETA for review and approval prior to implementation.

Mitigation Measure CUL-6: Consultation with Local Agencies Regarding Final Design of Weather Protection Canopies and Secretary of the Interior's Standards for Rehabilitation

The final design of the weather protection canopies will be developed in consultation with the Port's Waterfront Design Advisory Committee and the San Francisco Historic Preservation Commission, and consistent with the *Secretary of the Interior's Standards for the Treatment of Historic Properties, Standards for Rehabilitation* (NPS, 2001). The basic scale and massing of these project features is described in Section 6.1, but the details of their appearance has not been finalized.

Mitigation Measure CUL-6 requires consultation regarding final design of weather protection canopies, and application of the Secretary of the Interior's Standards to the final design. Project compliance with the Secretary of the Interior's Standards and applicable guidelines will ensure that the weather protection canopy element of the proposed project would not adversely affect any of the historic properties in the

Architectural APE or Focused Architectural APE. The standards for rehabilitation recommend "designing new exterior additions to historic buildings or adjacent new construction which is compatible with the historic character of the site and which preserves the historic relationship between the building or buildings and the landscape" (NPS 2001, 105). The guidelines also state that new additions, exterior alterations, or related new construction should not destroy historic materials, features, and spatial relationships that characterize the historic property. The new work should be compatible with the historic materials, features, size, scale and proportion, and massing to protect the integrity of the property and its environment. New additions and adjacent or related new construction should be undertaken in such a manner that, if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired. These guidelines, and others for historic setting, is and will continue to be incorporated in the design of the project features at the historic Ferry Building and the surrounding historic properties. The consultation and application of the Secretary of the Interior's Standards would ensure that historic integrity is retained, and that the properties would remain eligible for listing in the NRHP and CRHR, therefore avoiding potential adverse effects.

The final design for the project will include consultation and review by the Port's Waterfront Design Advisory Committee and the San Francisco Historic Preservation Commission. Through the design review process, the Waterfront Design Advisory Committee is responsible for ensuring that project improvements comply with the Secretary of the Interior's Standards for Historic Rehabilitation, and that projects would not adversely affect historic properties or districts along the waterfront. Given the resources in the project area, the San Francisco Historic Preservation Commission will be involved in the design review process. The public is also invited to participate in the design review process. WETA will submit the preliminary final design for the weather protection canopies to the Port's Waterfront Design Advisory Committee and the San Francisco Historic Preservation Commission for review and comment; input received during this review will be incorporated in the final design plans. This process will ensure that the final design would also avoid adverse effects to historic properties or resources in either the Architectural APE or Focused Architectural APE.

SAN FRANCISCO
PLANNING DEPARTMENT

MEMO

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San Francisco,
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Information:
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DATE: April 25, 2013

TO: Mike Gougherty, San Francisco Bay Area Water Emergency Transportation Authority (WETA)

FROM: Rich Sucré, Historic Preservation Technical Specialist,

(415) 575-9108

REVIEWED BY: Architectural Review Committee of the Historic Preservation Commission

RE: **Meeting Notes -**
Review and Comment at the April 17, 2013 ARC-HPC Hearing for the Downtown Ferry Terminal Expansion
Case No. 2013.0100F

At the request of the Planning Department and Port of San Francisco, the Architectural Review Committee (ARC) was asked to review and comment on the Downtown Ferry Terminal Expansion Project.

Currently, the proposed project is undergoing environmental review pursuant to the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA).

ARC RECOMMENDATIONS/COMMENTS

New Ferry Terminal Berthing Facilities-Gate A, Gate F and Gate G:
Overall, the ARC concurs with the staff determination that the new ferry terminal berthing facilities would be generally compatible with the adjacent historic resources and their character-defining features. The location and design of these new berthing facilities, including their floats, gangways, and access ramps, are located away from nearby historic resources, and are consistent with previously-determined compatible designs.

New Photovoltaic Canopies:
The ARC concurs with the staff recommendations regarding the design of the new canopies and elimination of the canopy extending in front of the north façade of the Ferry Building. Overall, the ARC agrees with the staff determination that the design of all new canopies should be refined to better relate to the adjacent historic resources and the surrounding historic district. Specifically, the ARC questioned the function and efficiency of the new photovoltaic panels on the canopies given their location and orientation. Further, the ARC found that the new canopy design would not appear to sufficiently shield passengers from wind and rain, due to the current design's height and upslope. In addition, the ARC commented on the number of canopies and their impact upon the view of the Ferry Building and the San Francisco Bay. The ARC questioned the

number of varying design expressions introduced into the area, which would be caused by the new photovoltaic canopies in combination with the existing East Bayside Promenade, entry portals to the new berthing facilities, and other existing site elements. The ARC also requested additional information on the queue time for the various ferry terminals and the justification for permanent canopies. The ARC questioned whether the destinations with longer queues could be moved to one of the other berthing facilities with longer canopy elements. Ultimately, the ARC found that the current design is not compatible with the surrounding historic resources.

Embarcadero Plaza:
Generally, the ARC concurs with the staff determination that the infill of the lagoon between the Agriculture Building and Ferry Building would be generally compatible and would not impact adjacent historic resources and their character-defining features. The ARC questioned the elevation of the Embarcadero Plaza and requested more detail on the flooding of the surrounding area and Agriculture Building. The ARC would also like additional information on the plaza design, materials and finishes before issuing a final opinion on this aspect of the proposed project.

Future Review:
The ARC appreciates the opportunity to review the initial concepts for the Downtown Ferry Terminal Expansion, and welcomes future review of the proposed project.

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June XX, 2013

Mike Gougherty
Water Emergency Transportation Authority
Pier 9, Suite. 111
The Embarcadero
San Francisco, CA 94111

Dear Mr. Gougherty,

On June 19, 2013, the Historic Preservation Commission (HPC) held a public hearing and took public comment on the Draft Environmental Impact Statement/Environmental Impact Report (Draft EIS/EIR) for the Downtown Ferry Terminal Expansion Project (SCH#2011032066).

After discussion, the HPC arrived at the comments below:

- **New Ferry Terminal Berthing Facilities-Gate A, Gate F and Gate G:**
  Overall, the HPC concurs that the new ferry terminal berthing facilities would be generally compatible with the adjacent historic resources and their character-defining features. The location and design of these new berthing facilities, including their floats, gangways, and access ramps, are located away from nearby historic resources, and are consistent with previously-determined compatible designs.

- **New Photovoltaic Canopies:**
  The HPC concurs with the recommendations to refine the design of the new canopies and eliminate the canopy extending in front of the north façade of the Ferry Building. Overall, the HPC finds that the design of the new canopies should be refined to better relate to the adjacent historic resources and the surrounding historic district.

  Specifically, the HPC questioned the function and efficiency of the new photovoltaic panels on the canopies given their location and orientation. Further, the HPC found that the new canopy design would not appear to sufficiently shield passengers from wind and rain, due to the current design's height and upslope. In addition, the HPC commented on the number of canopies and their impact upon the view of the Ferry Building and the San Francisco Bay. The HPC questioned the number of varying design expressions introduced into the area, which would be caused by the new photovoltaic canopies in combination with the existing East Bayside Promenade, entry portals to the new berthing facilities, and other existing site elements. The HPC also requested additional information on the queue time for the various ferry terminals and the justification for permanent canopies. The HPC questioned whether the destinations with longer queues could be moved to one of the other berthing facilities with longer canopy elements. Ultimately, the HPC found that the current design is not compatible with the surrounding historic resources, and would impact the visual setting of the Ferry Building.

- **Embarcadero Plaza:**
  Generally, the HPC finds that the infill of the lagoon between the Agriculture Building and Ferry Building would be generally compatible and would not impact adjacent historic resources and their character-defining features. The HPC questioned the elevation of the Embarcadero Plaza and requested more detail on the flooding of the surrounding area and Agriculture Building. The HPC would also like additional information on the plaza design, materials and finishes before issuing a final opinion on this aspect of the proposed project.

The aforementioned comments incorporate earlier comments by the Architectural Review Committee of the Historic Preservation Commission from their review of the proposed project on April 17, 2013. These comments address the proposed project's compliance with the Secretary of the Interior's Standards for Rehabilitation, and also request additional information on aspects of the project.

The HPC appreciates the opportunity to participate in review of this environmental document.

Sincerely,

Karl Hasz, President
Historic Preservation Commission

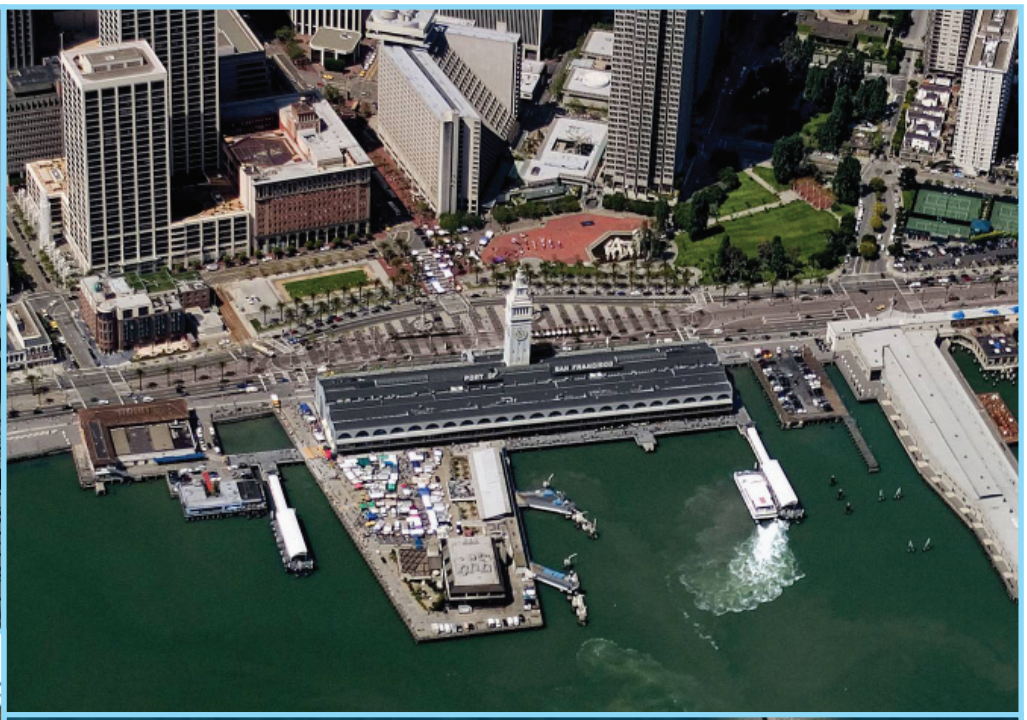
Draft Environmental Impact Statement/ Environmental Impact Report

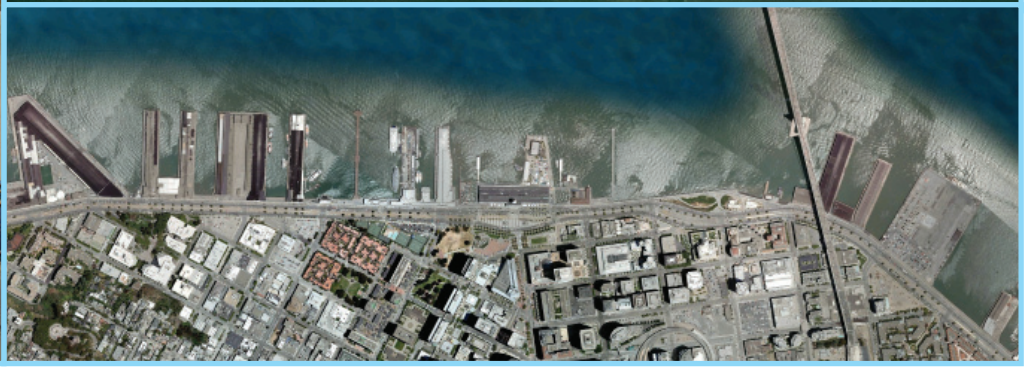
Downtown San Francisco Ferry Terminal Expansion Project

San Francisco Bay Ferry
WETA

Department of Transportation
United States of America

FTA
Federal Transit Administration





Photographs: Roma Design Group and URS, 2012.

June 2013

Downtown San Francisco Ferry Terminal Expansion Project

Draft
Environmental Impact Statement/ Environmental Impact Report

Prepared for
San Francisco Bay Area Water Emergency Transportation Authority
Pier 9, Suite 111, The Embarcadero
San Francisco, California 94111

and

U.S. Department of Transportation
Federal Transit Administration
Region IX
201 Mission Street, Suite 1650
San Francisco, California 94105

Prepared by
URS Corporation
One Montgomery Street, Suite 900
San Francisco, California 94104-4538

June 2013

Downtown San Francisco
Ferry Terminal Expansion Project
San Francisco, California

Draft Environmental Impact Statement/
Environmental Impact Report

Prepared Pursuant to:

National Environmental Policy Act of 1969, §102 (42 United States Code [USC] §4332); Federal Transit Law (49 USC Chapter 53); 49 USC §303 (formerly Department of Transportation Act of 1966 §4[f]); National Historic Preservation Act of 1966, §106 (16 USC §470f); Executive Order 11990 (Protection of Wetlands); Executive Order 11988 (Floodplain Management); Executive Order 12898 (Environmental Justice); California Environmental Quality Act, Public Resources Code §§21000 *et seq.*; and the State of California's California Environmental Quality Act Guidelines, California Administrative Code, §§15000 *et seq.*

by the

U.S. Department of Transportation
Federal Transit Administration

and the

San Francisco Bay Area
Water Emergency Transportation Authority

Date: MAY 21 2013

For Federal Transit Administration:

Leslie T. Rogers
Region IX Administrator
Federal Transit Administration

Date: MAY 21 2013

For San Francisco Bay Area Water Emergency Transportation Authority:

Nina Rannells
Executive Director
Water Emergency Transportation Authority

Draft Environmental Impact Statement/Environmental Impact Report
Downtown San Francisco Ferry Terminal Expansion Project
San Francisco, California

(State Clearinghouse No. 2011032066)

National Environmental Policy Act (NEPA) Lead Agency:	U.S. Department of Transportation, Federal Transit Administration
California Environmental Quality Act (CEQA) Lead Agency:	San Francisco Bay Area Water Emergency Transportation Authority
Cooperating Agency (NEPA):	National Oceanographic and Atmospheric Administration – National Marine Fisheries Service
Responsible Agency (CEQA):	Port of San Francisco
Participating Agencies (NEPA):	U.S. Army Corps of Engineers; U.S. Coast Guard, San Francisco Sector; U.S. Environmental Protection Agency; U.S. Fish and Wildlife Service; California State Lands Commission; San Francisco Bay Conservation and Development Commission; Bay Area Air Quality Management District; Bay Area Rapid Transit; and Port of San Francisco

The San Francisco Bay Area Water Emergency Transportation Authority (WETA) is considering improvements to the existing Ferry Terminal in downtown San Francisco. There are two alternatives: the No Action Alternative and the Action Alternative. The No Action Alternative maintains the existing Downtown San Francisco Ferry Terminal gate configuration and circulation areas, including the function, uses, and design of public spaces within the project area. Increases in passenger and water transit vessel arrivals that could be accommodated with the existing facilities at the Ferry Terminal would occur as a part of the No Action Alternative. The Action Alternative, or proposed project, includes expansion and improvement of the Ferry Terminal at the Ferry Building to accommodate construction of three new gates and overwater berthing facilities, in addition to supportive landside improvements, such as additional passenger waiting and queuing area, and circulation improvements. The proposed construction is scheduled to commence as early as 2014 and be completed by 2020. The project is proposed to support existing and planned future water transit services operated by WETA, as well as WETA's emergency response operations.

The Environmental Impact Statement/Environmental Impact Report evaluates the potential impacts of implementing the No Action Alternative and Action Alternative on transportation and circulation; land use and land use planning; parklands and recreation; Section 4(f) resources; air quality and global climate change; noise and vibration; cultural and paleontological resources; biological resources; aesthetics and visual resources; hydrology and water quality, hazards and hazardous materials; geology, soils, and seismicity; energy consumption; utilities and public services; socioeconomics; environmental justice; and regional growth.

A 60-day period has been established for comments on this document. Comments may be submitted in writing, or may be made orally at the public meeting. Written comments should be submitted to Mike Gougherty at the address below by July 30, 2013. Information on the public meeting can be obtained from WETA.

FOR ADDITIONAL INFORMATION CONCERNING THIS DOCUMENT, CONTACT:

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APPENDICES

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LIST OF FIGURES

LIST OF ACRONYMS AND ABBREVIATIONS

>	greater than
AB	Assembly Bill
ABAG	Association of Bay Area Governments
AC Transit	Alameda Contra Costa Transit
ADA	Americans with Disabilities Act
AEP	Archaeological Evaluation Plan
APE	area of potential effect
ARPA	Archaeological Resources Protection Act
BAAQMD	Bay Area Air Quality Management District
BART	Bay Area Rapid Transit
Bay Plan	San Francisco Bay Plan
BCDC	Bay Conservation and Development Commission
BMP	best management practice
CAAQS	California Ambient Air Quality Standards
Cal EMA	California Emergency Management Agency
Cal/EPA	California Environmental Protection Agency
CAL FIRE	California Department of Forestry and Fire Protection
Cal/OSHA	California Department of Industrial Relations, Division of Occupational Safety and Health
Caltrans	California Department of Transportation
CAP	climate action plan
CARB	California Air Resources Board
CBC	California Building Code
CCAA	California Clean Air Act
CCC	California Coastal Conservancy
CCC	Central California Coast
CCDC	Chinatown Community Development Center
CCSF	City and County of San Francisco
CDFG	California Department of Fish and Game
CDFW	California Department of Fish and Wildlife
°C	degrees Celsius
CEC	California Energy Commission
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CH_4	Methane
CHRS	California Historical Resource Status
CNDDB	California Natural Diversity Data Base
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CNRA	California Natural Resources Agency
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
Corps	U.S. Army Corps of Engineers
COTP	Captain of the Port
CRHR	California Register of Historic Resources
CSI	Cambridge Systematics, Inc.
CWA	Clean Water Act

cy	cubic yard
CZMA	Coastal Zone Management Act
dB	decibel
dBA	A-weighted decibel
dBC	C-weighted decibel
DDT	dichloro-diphenyl-trichloroethane
DMMO	Dredged Material Management Office
DPM	diesel particulate matter
DPS	distinct population segment
DTSC	Department of Toxic Substances Control
DWR	California Department of Water Resources
EDD	Employment Development Department
EDR	Environmental Data Registry
EFH	Essential Fish Habitat
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
EO	Executive Order
ESA	Environmental Site Assessment
ESU	evolutionarily significant unit
FCAA	Federal Clean Air Act
FEMA	Federal Emergency Management Agency
Ferry Building	San Francisco Ferry Building
Ferry Terminal	Downtown San Francisco Ferry Terminal
FESA	Federal Endangered Species Act
FHWA	Federal Highway Administration
FHWG	Fisheries Hydroacoustic Working Group
FIRM	flood insurance rate map
FMP	fisheries management plan
FTA	Federal Transit Administration
GGAS	Golden Gate Audubon Society
GGT	Golden Gate Transit
GHG	greenhouse gas
GIS	Geographic Information System
GWh	gigawatt hour
GWP	Global Warming Potential
HMMP	Hazardous Materials Management Plan
HMUPA	Hazardous Materials Unified Program Agency
Hz	Hertz
I-80	Interstate 80
I-280	Interstate 280
I-580	Interstate 580
IOP	Implementation and Operations Plan
IPCC	Intergovernmental Panel on Climate Change
ISO	International Organization for Standardization
L_{10}	noise levels exceeded 10 percent of the measured time interval
L_{50}	noise levels exceeded 50 percent of the measured time interval
L_{90}	noise levels exceeded 90 percent of the measured time interval
lbs/day	pounds per day
L_{dn}	day-night average sound level
L_{eq}	equivalent sound level
L_{max}	Maximum sound level
L_{min}	Minimum sound level

LOS	Level of Service
L_V	vibration level
LTMS	Long-Term Management Strategy
mg/L	milligrams per liter
$\mu g/m^3$	micrograms per cubic meter
mg/m^3	milligrams per cubic meter
MHHW	mean higher high water
MLD	Most Likely Descendant
MLLW	mean lower low water
MMI	Modified Mercalli Intensity
mph	miles per hour
MTC	Metropolitan Transportation Commission
Muni	San Francisco Municipal Railway
M_W	Moment Magnitude
NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Graves Protection and Repatriation Act
NAHC	Native American Heritage Commission
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NO_2	nitrogen dioxide
NOAA	National Oceanic and Atmospheric Administration
NO_X	oxides of nitrogen
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
NWIC	Northwest Information Center
NYT	New York Times
PAH	polyaromatic hydrocarbon
PCB	polychlorinated biphenyl
PG&E	Pacific Gas and Electric Company
Planning Code	San Francisco Planning Code
PM	particulate matter
PM_{10}	particulate matter less than 10 µm in diameter
$PM_{2.5}$	particulate matter less than 2.5 µm in diameter
Port	Port of San Francisco
Porter-Cologne Act	Porter-Cologne Water Quality Control Act of 1969
ppb	parts per billion
pphm	parts per hundred million
ppm	parts per million
PPV	peak particle velocity
PRC	Public Resources Code
PST	Pacific Standard Time
RMP	Regional Monitoring Program
ROG	reactive organic gas
ROMA	ROMA Design Group
RWQCB	Regional Water Quality Control Board
SamTrans	San Mateo County Transit District
SAP	Special Area Plan
SB	Senate Bill
Seaport Plan	San Francisco Bay Area Seaport Plan
SEL	sound exposure level
sf	square feet

SFBAAB	San Francisco Bay Area Air Basin
SFDPH	San Francisco Department of Public Health
SFDPW	San Francisco Department of Public Works
SFEI	San Francisco Estuary Institute
SFEP	San Francisco Estuary Project
SF Environment	San Francisco Department of the Environment
SFFD	San Francisco Fire Department
SFHA	special flood hazard area
SFMH	Saint Francis Memorial Hospital
SFMTA	San Francisco Municipal Transportation Agency
SFPD	San Francisco Police Department
SFPUC	San Francisco Public Utilities Commission
SFSD	San Francisco Sheriff's Department
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SLC	State Lands Commission
SO_2	sulfur dioxide
SVP	Society of Vertebrate Paleontology
SWL	still water level
SWMP	Stormwater Management Program
SWRCB	State Water Resources Control Board
TAC	toxic air contaminant
TBD	to be determined
TCDP	Transit Center District Plan
TEP	Transit Effectiveness Project
TICD	Treasure Island Community Development, LLC
TRB	Transportation Research Board
UBC	Uniform Building Code
ULSD	ultra-low sulfur diesel
URS	URS Corporation
USC	United States Code
USCG	U.S. Coast Guard
U.S. DOT	U.S. Department of Transportation
U.S. EPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
UST	underground storage tank
VdB	velocity in decibels
VRP	visibility reducing particle
Waterfront Plan	Port of San Francisco Waterfront Plan
WETA	Water Emergency Transportation Authority
WGCEP	Working Group on California Earthquake Probabilities
WTA	Water Transit Authority

EXECUTIVE SUMMARY

INTRODUCTION

The San Francisco Bay Area Water Emergency Transportation Authority (WETA) is proposing to expand berthing capacity at the Downtown San Francisco Ferry Terminal (Ferry Terminal), located at the San Francisco Ferry Building (Ferry Building), to support existing and future planned water transit services operated by WETA and WETA's emergency operations, as detailed in WETA's Implementation and Operations Plan (IOP) (WETA, 2003b). The Downtown San Francisco Ferry Terminal Expansion Project (or project) would include construction of three new gates and overwater berthing facilities, in addition to supportive landside improvements, such as additional passenger waiting and queuing areas, circulation improvements, and other water transit-related amenities. The new gates and other improvements would be designed to accommodate future planned water transit services between Downtown San Francisco and Antioch, Berkeley, Martinez, Hercules, Redwood City, Richmond, and Treasure Island, as well as emergency operation needs.

The Ferry Terminal is in the northeastern section of San Francisco, California, situated at the foot of Market Street at The Embarcadero. The project area encompasses property managed in the public trust by the Port of San Francisco (Port) from the south side of Pier 1 to the north side of Pier 14, and from the Embarcadero Promenade to San Francisco Bay (Figure ES-1). The project area includes the Ferry Building, the Ferry Plaza, the Agriculture Building, and Pier 2. The project area includes existing water transit facilities (Gates B, C, D, and E), a variety of commercial uses (retail, dining, and office), and public open spaces.

WETA and the Federal Transit Administration (FTA) have prepared this Environmental Impact Statement/Environmental Impact Report (EIS/EIR) to address the environmental effects of the proposed Ferry Terminal improvements. These agencies have prepared this EIS/EIR in accordance with the National Environmental Policy Act (NEPA) of 1969, 42 United States Code (USC) Section 4321 et seq.; the Council on Environmental Quality (CEQ) regulations for implementing NEPA, 40 Code of Federal Regulations (CFR), Parts 1500-1508; the California Environmental Quality Act (CEQA) of 1970, California Public Resources Code, Section 21000 et seq., as amended; the Guidelines for Implementation of CEQA, Title 14, California Code of Regulations (CCR), Section 15000 et seq.; and FTA guidelines. The FTA is the NEPA lead agency, and WETA is the CEQA lead agency.

The proposed project builds on previous planning efforts and projects implemented by WETA and the Port. WETA adopted its IOP and Program EIR for the IOP in 2003, which planned for a system-wide expansion of water transit service in the Bay Area. The IOP identified new routes that would be developed over a 20-year period. The new routes would connect Downtown San Francisco with areas of the North, East, and South Bay. In addition, in the 1990s, the Port initiated a comprehensive land use planning process that identified near-term and long-term improvements that should be made to the Ferry Terminal. As a result, in 2003, the Port completed Phase I of the Downtown Ferry Terminal Project, which included the construction of Gates B and E. Phase I of the Downtown Ferry Terminal Project also identified long-term future projects that would continue to improve circulation, public spaces, and water transit operations at the Ferry Terminal.

The planning efforts undertaken by WETA for this project build on these previous projects and planning processes, and have been coordinately closely with the Port.

PURPOSE AND NEED

Purpose of the Project

The purpose of the project is to support existing and future planned water transit services operated by WETA on San Francisco Bay, as established by WETA in its IOP (WETA, 2003b), and in accordance with City and County of San Francisco (CCSF) and regional policies to encourage transit use. Furthermore, the project would address deficiencies in the transportation network that impede water transit operations, passenger access, and passenger circulation at the Ferry Terminal. The project objectives would:

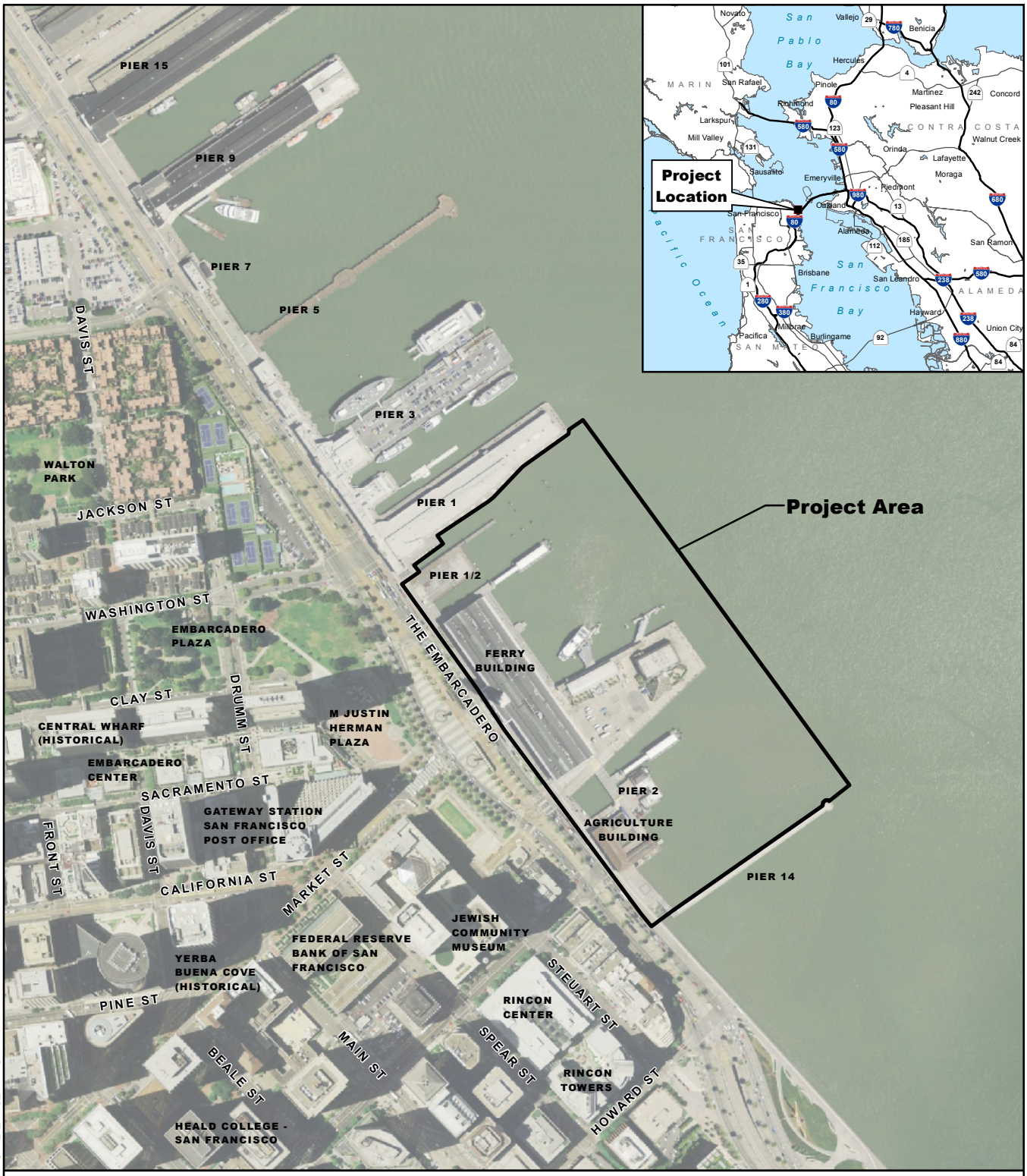
- Accommodate WETA's projected increase in water transit ridership and related vessel arrivals and departures from the Ferry Terminal;
  - Provide a viable alternative mode of transportation that accommodates projected increases in transbay trips, and helps alleviate congestion over the San Francisco Bay Bridge and through the San Francisco Bay Area Rapid Transit (BART) Transbay Tube;
- Address WETA and the Port's emergency operation needs;
  - Establish a circulation plan and improved signage that provides clear pedestrian routes for vessel-to-bus and vessel-to-rail transfers, as well as safe routes for bicycles, emergency vehicles, and delivery trucks to enter, park, and exit the area;
  - Provide necessary landside improvements, such as designated weather-protected areas for waiting and queuing, ticket machines and fare collection equipment, improved lighting, and improved boarding and arrival/departure information to serve water transit passengers and to enhance the Ferry Terminal as the central hub for water transit services on San Francisco Bay; and
- Enhance the area's public access and open space with design features that create attractive, safe daytime and nighttime public spaces for both water transit passengers and other users of the Ferry Building area.

Need for the Proposed Project

Regional Growth and Transbay Capacity Constraints

Between now and 2035, the Bay Area is expected to gain 2 million residents and 1.7 million jobs (MTC, 2009). Downtown San Francisco will remain one of the primary employment centers of the region. The Metropolitan Transportation Commission (MTC) estimates that the Bay Bridge corridor will have substantial growth in the number of daily person trips, increasing from 590,000 current trips to 772,000 in 2025; and in vehicular traffic increasing from 300,000 current vehicles per day to 425,000 vehicles per day in 2025 (MTC, 2002). MTC estimates transbay transit ridership will also follow this growth trend.

Transit currently carries approximately 160,700 BART passengers, 15,200 Alameda-Contra Costa Transit (AC Transit) bus passengers, and 4,900 water transit passengers between the East Bay and San Francisco (MTC, 2000). By 2025, BART is expected to carry 254,000 daily riders through the Transbay Tube. AC Transit is expected to carry 19,800 passengers to and from San Francisco, and water transit services are expected to carry 7,060 passengers. In total, 36 percent of Bay Bridge corridor trips are expected to be on transit (MTC, 2002).



Note: The America's Cup project has removed all of Pier 1/2 and will remove the building located on Pier 2 prior to project construction.

Source: Imagery, Digital Globe, 2009.

DOWNTOWN SAN FRANCISCO FERRY TERMINAL EXPANSION PROJECT AREA

Downtown San Francisco
Ferry Terminal Expansion Project
28067812 San Francisco, California

FIGURE ES-1

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The projected increase in transbay trips will result in the following deficiencies in the transportation network:

- Congestion/travel delay in the I-80/Bay Bridge corridor;
- Increased bus and carpool delays;
- BART Transbay Tube capacity constraints; and
- Inadequate transit service to meet projected Treasure Island demand following redevelopment.

Water Transit Operations, Circulation, and Access Constraints at the San Francisco Ferry Building

In 2035, the Ferry Terminal is projected to serve approximately 32,000 water transit passengers, an approximate increase of 300 percent over current ridership levels of approximately 11,200 passengers, accounting for existing services between San Francisco and Alameda, Oakland, and Vallejo, as well as future planned water transit services between San Francisco and Antioch, Berkeley, Martinez, Hercules, Redwood City, Richmond, and Treasure Island (CSI, 2011). The projected ridership increases cannot be adequately accommodated at the Ferry Terminal because of the following current infrastructure, circulation, and operating deficiencies:

- Insufficient number of gates and berthing facilities to accommodate new water transit service;
- Inadequate waiting and circulation area for passengers; and
- Lack of clearly designated pedestrian connectivity linkages.

Air Quality Management Issues

Although the San Francisco Bay Area's air quality has improved in recent years, an increase in population and vehicle miles driven between now and 2035 is expected to increase particulate matter emissions by 20 percent for particulate matter 2.5 microns in diameter or less ($PM_{2.5}$), and 29 percent for particulate matter 10 microns in diameter or less (PM_{10}) (MTC, 2009). The BAAQMD regional performance objectives call for reductions in daily vehicle miles traveled by 10 percent, $PM_{2.5}$ emissions by 10 percent, PM_{10} emissions by 45 percent, and carbon dioxide emissions to 40 percent below 1990 levels (MTC, 2009). Cross-bay water transit service can support Bay Area air quality goals by encouraging a shift from vehicle to water transit usage. The WETA IOP Program EIR, which analyzed increased regional water transit service, found that an expanded water transit system would result in a net decrease in nitrous oxide (an ozone precursor), carbon monoxide, and PM_{10} (WETA, 2003a).

Disaster Response and Recovery

Water transit provides a viable alternative for transporting people around the region when unexpected and long-term disruption renders other components of the regional transportation system inoperable. Disastrous events that have disrupted the transportation system have occurred several times during the past 25 years. In the event of a disaster, WETA will provide emergency water transportation services during the response phase, and then restore basic water transit services during the recovery phase of a disaster, as described in the WETA Transition Plan (WETA, 2009).

According to the San Francisco Bay Area Regional Emergency Coordination Plan, in the event of a major catastrophe, such as a 7.9 magnitude earthquake on the San Andreas Fault, it is estimated that approximately 296,200 people from San Francisco County will require mass transportation assistance within the first 3 days of the event (Cal EMA et al., 2010). In its Preliminary Design Concept Plan, WETA estimates that additional gates will be needed to accommodate the substantial number of evacuees in the event of a major catastrophe (ROMA, 2012). In addition to the Golden Gate Ferry gates, five WETA-operated gates could board 9,000 evacuees per hour. Currently, the two existing WETA gates have the capacity to board less than half that number of evacuees per hour.

The limited availability of berthing facilities will be further constrained by the lack of available staging areas to assemble, queue, and board crowds of evacuees. To accommodate the volume of people accessing gates during emergencies, the circulation area surrounding the Ferry Building will need to be expanded with new decking built over open water to Essential Facilities[1] standards.

ALTERNATIVES

The project includes two alternatives: the No Action Alternative, and the Action Alternative under NEPA guidelines (No Project and Project under the CEQA guidelines).

No Action Alternative

The No Action Alternative maintains the existing Ferry Terminal gate configuration and circulation areas, including the function, uses, and design of public spaces within the project area. No new gates or additional boarding capacity would be provided to accommodate new WETA services or the expansion of existing WETA services as part of the No Action Alternative. Similarly, there would be no implementation of circulation and boarding improvements to respond to emergency planning requirements. Increases in passenger and water transit vessel arrivals that could be accommodated with the existing facilities at the Ferry Terminal would occur as a part of the No Action Alternative.

The Ferry Terminal currently serves approximately 11,200 average weekday passengers on six water transit routes, with approximately 21 AM peak-period vessel arrivals each weekday. Of this total, the three routes operated by WETA currently serve approximately 5,100 average weekday passengers, and account for 14 AM peak-period vessel arrivals, carrying 1,400 AM peak-period passengers each weekday. Under the No Action Alternative, all Ferry Terminal water transit services would continue to operate as they currently do, with the AM peak-period travel occurring generally between 6:30 and 9:00 AM, and PM peak-period travel occurring between 4:00 and 6:30 PM.

As described in WETA's approved IOP and Program EIR for the IOP, water transit service is planned to expand on San Francisco Bay (WETA, 2003b). As a part of the No Action Alternative, these new routes could still be developed. However, because under the No Action Alternative no improvements would be made at the Ferry Terminal, the No Action Alternative includes a limited expansion of service (vessel arrivals and/or passengers) that could be reasonably accommodated by the existing facilities at the Ferry Terminal. The increase in passengers or vessel arrivals could be associated with expansion of existing services or the addition of new routes, as would be determined by WETA, based on operational need.

With the existing infrastructure, for the purposes of this EIS/EIR, it is assumed that each gate could reasonably and safely accommodate a maximum of four to five vessel arrivals per hour during peak operations. Based on this and historical patterns of vessel capacity and ridership fluctuations throughout the day, it is assumed that existing infrastructure available to WETA at the Ferry Terminal could accommodate up to 7,800 passengers per weekday, 2,500 passengers during the AM peak period, 20 vessel arrivals during the AM peak period, and a total of 65 vessel arrivals per weekday. This level of water transit service could occur under the No Action Alternative.

In addition, as a part of the America's Cup Project, several of the existing facilities within the project area will be altered pursuant to the San Francisco Bay Conservation and Development Commission's (BCDC) Special Area Plan (SAP) amendments adopted in April 2012 (BCDC, 2012). The SAP amendments require that Pier ½ (and its associated piles) be removed by March 2013. In addition, the SAP

[1] As defined by the California Building Code 2010 and the International Building Code 2009, Essential Facilities are buildings and other structures that are intended to remain operational in the event of extreme environmental loading from flood, wind, snow, or earthquakes.

amendments require that the shed on Pier 2—which currently houses a restaurant—be vacated and removed by March 2015.[2] As of October 2012, Pier ½ had been removed.

This alternative serves as the baseline against which the environmental effects of the Action Alternative are measured.

Action Alternative

The Action Alternative is the expansion and improvement of the Ferry Terminal at the Ferry Building to accommodate the full expansion of water transit service that was described in the IOP. Based on the existing and new water transit services that would be operated by WETA, ridership on WETA services is projected to increase from 5,100 to 25,700 passengers per weekday by 2035; total AM peak-period WETA vessel arrivals are anticipated to increase from 14 to approximately 52 to 57, with approximately 181 total vessel arrivals per weekday.

To accommodate the full expansion of water transit service, the Action Alternative includes construction of three new gates and overwater berthing facilities, in addition to supportive landside improvements, such as additional passenger waiting and queuing areas and circulation improvements. Figure ES-2 depicts the project area with the proposed improvements. The proposed project improvements have been designed to not only meet the purpose and need of WETA's expansion plans, but also in keeping with the historical significance of the area and its role as an important public gathering place in the region. The project has also been designed in close coordination with the Port, and in consideration of the Port's objectives for continued improvement of the area.

As described under the No Action Alternative, as a part of the America's Cup Project, several of the existing facilities in the project area will be altered. These alterations would be completed prior to implementation of WETA's proposed project; therefore, the project improvements described in this EIS/EIR are those improvements that would be required after demolition of these facilities as a part of the America's Cup Project.

The project includes demolition, removal, repair, and replacement of existing facilities, as well as construction of new facilities in the project area. The Ferry Terminal can generally be divided into the North Basin (areas north of the Ferry Plaza) and South Basin (areas south of the Ferry Plaza). The project includes the following elements:

- Removal of portions of existing deck and pile construction and fendering (portions would remain as open water, and other portions would be replaced);
- Construction of one new gate and access pier (Gate A) in the North Basin and two new gates (Gates F and G) in the South Basin; and
- Improved passenger boarding areas, amenities, and circulation, including rebuilding a portion of the marginal wharf in the North Basin; extending the East Bayside Promenade along Gates E, F, and G; strengthening the South Apron of the Agriculture Building; creating the Embarcadero Plaza; and installing weather protection canopies for passenger queuing.

The project elements are summarized in Table ES-1. Construction activities would be expected to commence as early as 2014 and be completed by 2020.

[2] Prior to the adoption of these Special Area Plan amendments in April 2012, the Special Area Plan required that Pier ½ and Pier 2 (including the shed) be removed as a part of the Phase II of the Downtown Ferry Terminal Project.

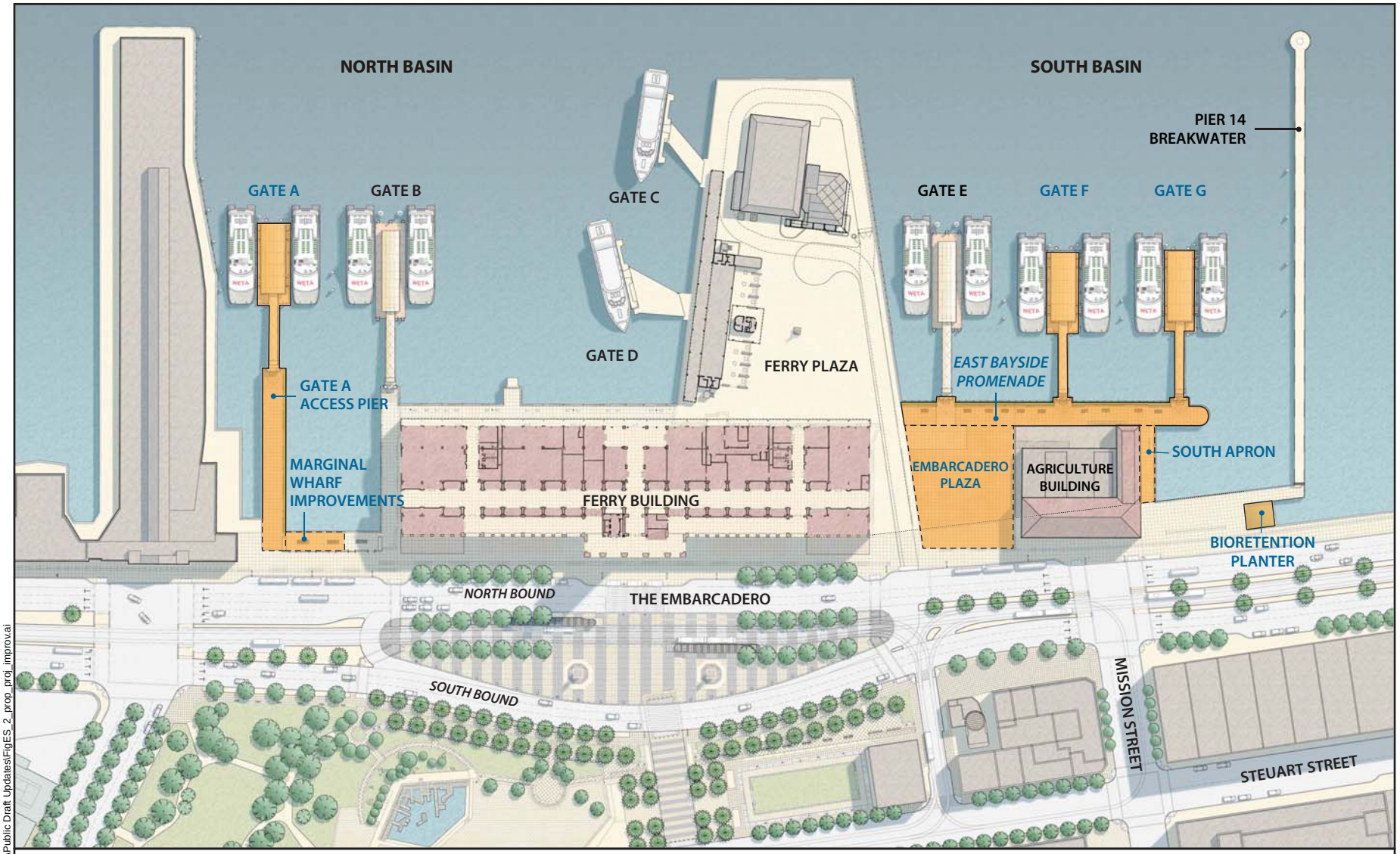
Table ES-1
Summary of Demolition and New Construction

Project Element	Area	Type of Work
Pier 2 and additional deck structure in the South Basin	20,500 square feet	Demolition of deck and 350 piles
North Basin Marginal Wharf	2,550 square feet	Strengthen piles and replace decking
South Apron of the Agriculture Building	2,400 square feet	Temporary repair of apron structure for use during construction
Gate A	Access Pier = 8,000 square feet Gangway = 1,300 square feet Float = 5,200 square feet Total = 14,500 square feet	New pier and berthing facilities for new gate; new furnishings and equipment on pier (guardrails, lights, ticket machines, etc.). Existing fendering along the edge of Pier 1 may be replaced.
Gate F	Gangway = 1,300 square feet Float = 5,200 square feet Total = 6,500 square feet	New berthing facilities for new gate, including new fendering along the East Bayside Promenade.
Gate G	Gangway = 1,300 square feet Float = 5,200 square feet Total = 6,500 square feet	New berthing facilities for new gate, including new fendering along the East Bayside Promenade.
Embarcadero Plaza	24,500 square feet total	Surface improvements, as well as new deck and piles
East Bayside Promenade	13,850 square feet	New deck and piles; new furnishings and equipment (guardrails, lights, ticket machines, etc.)
Weather protection canopies	Gate A = 200 feet long by 20 feet wide Gate B = 200 feet long by 20 feet wide South Basin = 420 feet long by 24 feet wide	Installation of steel, glass, and photovoltaic cell overhead canopy on the pier deck

ENVIRONMENTAL CONSEQUENCES

Table ES-2 presents a summary of impacts for the Action Alternative, the corresponding mitigation measures for each impact, and the NEPA and CEQA impact levels after mitigation. Direct, indirect, construction, and cumulative impacts were evaluated for each resource area. Direct impacts are the primary effects that are caused by the project, and occur at the same time and place. For the proposed project, direct impacts would be the result of development of the physical facility improvements. Indirect impacts are secondary effects that are reasonably foreseeable and caused by the project, but occur at a different time or place. For the proposed project, the facility improvements would facilitate an increase in vessel and passenger use of the Ferry Terminal area; these effects are described as indirect impacts. Construction impacts are those that would occur only during construction of the project, and would cease when the project enters into the operation phase. Cumulative impacts occur when two or more individual effects that, when considered together, are considerable; or that compound or increase other environmental impacts. A detailed discussion of these impacts and mitigation measures is included in Chapter 3, Affected Environment, Consequences, and Mitigation.

Impacts of the No Action Alternative are presented in Chapter 3.0 for comparison to those of the Action Alternative; however, mitigation measures and NEPA and CEQA determinations are not made for impacts of the No Action Alternative. The only potentially adverse impacts identified for the No Action



Areas of Project Improvements

GATE A Project Element

N

0 50 100 150 FEET

Source: Roma Design Group, et al., 2012

PROPOSED PROJECT IMPROVEMENTS

Downtown San Francisco
Ferry Terminal Expansion Project
San Francisco, California

28067812

FIGURE ES-2

4/01/13 vsa...T:\WETA\Draft EIR-EIS\Public Draft Updates\FigES_2_prop_proj_improv.ai

Table ES-2
Summary of Impacts and Mitigation Measures for the Action Alternative

Impact	Mitigation Measure	NEPA Determination	CEQA Determination
Transportation and Circulation			
Impact 3.2-1: Potential Traffic Impacts to Study Area Intersections in Existing Conditions Increases in pedestrian and bicycle volumes associated with the project under Existing Conditions would result in only minor increases to traffic delay for the study intersections.	No mitigation necessary.	Not adverse.	Less than significant.
Impact 3.2-2: Potential Impacts to Transit in Existing Conditions Increases in transit demand associated with the project under Existing Conditions would result in an increase to local and regional transit volumes. The only increase that would be adverse and above the thresholds of significance established by the City and County of San Francisco's guidelines and policies would be the addition of riders to the Muni F Market and Wharves in the PM peak hour.	Methods for mitigating impacts are being evaluated. If feasible mitigation is identified, it will be included in the Final EIS/EIR.	Adverse.	Significant and unavoidable.
Impact 3.2-3: Potential Impacts to Pedestrian Facilities in Existing Conditions Increases in pedestrian circulation associated with the project under Existing Conditions would result in substantial overcrowding for three study area crosswalks. Preliminary analysis indicates that Mitigation Measures TRANS-1 and TRANS-2 could reduce the potential impacts, however, the impacts may not be fully mitigated.	**Mitigation Measure TRANS-1: Implement The Embarcadero Midblock at the Ferry Building Southbound and Northbound (No. 15A/15B) Intersection Adjustments** WETA will enter into an agreement with SFMTA to modify the intersection signal timing for The Embarcadero Midblock at the Ferry Building Southbound and Northbound (No. 15A/15B), to remove the northbound-southbound movement (No. 9); and distribute the time to the northbound movement (Turning Movement No. 2/Turning Movement No. 5) and southbound movement (Turning Movement No. 10), to allow for longer crossing times for pedestrians. This adjustment would result in the LOS for the crosswalk to be improved to LOS D for the respective AM and PM peak hours, without causing intersection LOS to drop to an unacceptable level. SFMTA has discretion over the specific timing adjustments, and the timing of the implementation of any changes affecting the transportation network in San Francisco. **Mitigation Measure TRANS-2: Implement The Embarcadero and Market West (No. 17) Crosswalk Adjustments** WETA will enter into an agreement with SFMTA to widen the pedestrian crosswalk at The Embarcadero and Market Street Southbound (No. 17) to a minimum of 72 feet. This adjustment	Adverse after implementation of mitigation.	Significant and unavoidable.

Table ES-2
Summary of Impacts and Mitigation Measures for the Action Alternative (Continued)

Impact	Mitigation Measure	NEPA Determination	CEQA Determination
	would result in the LOS for the crosswalk to be improved to LOS D, without causing a drop in intersection LOS for traffic. The existing crosswalk at this location is 42 feet in width; therefore, it would require a 30-foot widening (for a minimum width of 72 feet). However, there are a number of signs, poles, and other street furniture located north and south of the crosswalk on either side of the roadway that could have to be relocated to allow the crosswalk to be widened. These include: ▪ Along the western side of The Embarcadero, 2.5 feet north of the crosswalk, there is a traffic signal; and 15 feet north of the crosswalk, there is a manhole. ▪ Along the western side of The Embarcadero, south of the crosswalk, there is a pedestrian crossing signal 2 feet from the crosswalk; a newspaper vending box 8 to 16 feet from the crosswalk; a street light 20 feet from the crosswalk; a "no parking" sign 24 feet from the crosswalk; and a traffic signal 30 feet from the crosswalk. A tree is located approximately 44 feet south of the crosswalk. ▪ Along the eastern side The Embarcadero, a traffic signal and pedestrian call button are located 1 foot north of the crosswalk. ▪ Along the eastern side The Embarcadero, a pedestrian crossing signal is located at the southern edge of the crosswalk, a decorative spherical bollard is 23 feet south of the crosswalk, and a traffic signal is 32 feet south of the crosswalk. SFMTA has discretion over the specific adjustments and the timing of the implementation of any changes affecting the transportation network in San Francisco, and SFDPW will be required to review and approve any relocation of manholes.		

Table ES-2
Summary of Impacts and Mitigation Measures for the Action Alternative (Continued)

Impact	Mitigation Measure	NEPA Determination	CEQA Determination
Impact 3.2-4: Potential Impacts to Bicycle Facilities in Existing Conditions The project would be expected to increase bicycle volumes in the study area, but also includes circulation improvements. Overall, the project would not cause potentially hazardous conditions for bicyclists, or substantially interfere with bicycle accessibility.	No mitigation necessary.	Not adverse.	Less than significant.
Impact 3.2-5: Potential Impact of Construction-Related Activities on Transportation and Circulation The majority of construction would be conducted from barges in the project area. In addition, the construction workforce would be small (between 4 and 25 construction workers). Between 15 and 20 trucks would access the site for construction-related activities on a given day. While the project would not result in adverse impacts, to further reduce the potential temporary disruptions to transportation and circulation, consistent with construction management best practices, WETA will implement Mitigation Measure TRANS-3, Construction Circulation Management.	**Mitigation Measure TRANS-3: Construction Circulation Management** WETA will meet with the Traffic Engineering Division of SFMTA, the Fire Department, Muni, and the Planning Department to determine the best methods and avoidance measures to minimize traffic congestion and potential negative effects to pedestrian or bicycle circulation in the project area during construction of the proposed project. Additional avoidance measures that could be implemented could include encouraging carpooling and transit use for construction workers, managing construction traffic on Mission Street to avoid peak-period congestion, informing the public of construction schedules and activities, and posting of wayfinding signage in the project area for pedestrians and bicycles.	Not adverse.	Less than significant.
Impact 3.2-6: Potential Cumulative Traffic Impacts to Study Area Intersections in Future (2035) Conditions Increases in pedestrian and bicycle volumes associated with the project under Future (2035) Conditions would result in only minor increases to traffic delay for the study intersections.	No mitigation necessary.	Not adverse.	Less than significant.
Impact 3.2-7: Potential Cumulative Impacts to Transit in Future (2035) Conditions Increases in transit demand associated with the project under Future (2035) Conditions would result in a minor increase to local and regional transit volumes. All increases would be below the thresholds of significance established by the City and County of San Francisco's guidelines and policies.	No mitigation necessary.	Not adverse.	Less than significant.

Table ES-2
Summary of Impacts and Mitigation Measures for the Action Alternative (Continued)

Impact	Mitigation Measure	NEPA Determination	CEQA Determination
Impact 3.2-8: Potential Cumulative Impacts to Pedestrian Facilities in Future (2035) Conditions Increases in pedestrian circulation associated with the project under Future (2035) Conditions would result in substantial overcrowding for three study area crosswalks. Preliminary analysis indicates that Mitigation Measures TRANS-1 and TRANS-2 could reduce the potential impacts, however, the impacts may not be fully mitigated.	**Mitigation Measure TRANS-1: Implement The Embarcadero Midblock at the Ferry Building Southbound and Northbound (No. 15A/15B) Intersection Adjustments** **Mitigation Measure TRANS-2: Implement The Embarcadero and Market West (No. 17) Crosswalk Adjustments**	Adverse after implementation of mitigation.	Significant and unavoidable.
Impact 3.2-9: Potential Cumulative Impacts to Bicycle Facilities in Future (2035) Conditions The project would be expected to increase bicycle volumes in the study area, but also includes circulation improvements. Overall, the project would not cause potentially hazardous conditions for bicyclists, or substantially interfere with bicycle accessibility.	No mitigation necessary.	Not adverse.	Less than significant.
Land Use and Land Use Planning			
Impact 3.3-1: Substantially Affect Existing Land Uses and Land Use Patterns The project improvements and increase in water transit services at the Ferry Terminal support the existing land uses at the Ferry Terminal, and would allow for the continuation of existing land use patterns in the project vicinity.	No mitigation necessary.	Not adverse.	Less than significant.
Impact 3.3-2: Conflict with Applicable BCDC Plans and Policies With implementation of Mitigation Measure LU-1, the project would not conflict with applicable BCDC land use plans and policies adopted to avoid or mitigate environmental effects. As a result of BCDC's review and permitting for the proposed project, the project would be implemented in a manner consistent with BCDC plans and policies, and would be consistent with the Coastal Zone Management Act.	**Mitigation Measure LU-1: Removal of Fill in San Francisco Bay** To offset the new fill in San Francisco Bay created by the proposed project improvements, WETA will remove fill elsewhere in San Francisco Bay. Fill removal location and amount will be determined in coordination with BCDC during the Major Permit and Design Review process. The amount of fill to be removed is anticipated to be no more than the amount of new fill created by the project. Sites that would be considered for fill removal include dilapidated piers, wharfs, and remnant pilings that were constructed with creosote-treated wood; have no current maritime uses; and are not in areas with sensitive biological resources, such as eelgrass beds.	Not adverse after implementation of mitigation.	Less than significant with mitigation.

Table ES-2
Summary of Impacts and Mitigation Measures for the Action Alternative (Continued)

Impact	Mitigation Measure	NEPA Determination	CEQA Determination
	WETA would conduct removal activities in accordance with applicable regulatory permits (as described in this EIS/EIR), and would cut or break the piles off at least 2 feet below the mudline. WETA would minimize sediment disturbance during removal, use a floating boom around the work area to contain and capture debris; and have absorbent pads available in the event that a petroleum sheen develops during removal of the structures. Mitigation measures and regulatory requirements described in the EIS/EIR for proposed project activities (i.e., demolition and removal of piles and piers) would also apply to the demolition and removal of fill elsewhere in the Bay; these would include Mitigation Measures AQ-1, Implement BAAQMD-Recommended Best Management Practices; CUL-1, Inadvertent Discovery Measures; CUL-2, Stop Construction if Buried Paleontological Resources are Discovered; HAZ-1, Prepare a Hazardous Materials Management Plan; and BIO-1, Dredging and Pile Driving Measures.		
Impact 3.3-3: Conflict with Applicable City and County of San Francisco Land Use Plans and Policies The project would not conflict with applicable City and County of San Francisco plans and policies (i.e., San Francisco General Plan, Northeast Waterfront Area Plan, and the San Francisco Planning Code) that were adopted to avoid or mitigate environmental effects.	No mitigation necessary.	Not adverse.	No impact.
Impact 3.3-4: Conflict with Applicable Port of San Francisco Land Use Plans and Policies The project would not conflict with applicable Port plans and policies that were adopted to avoid or mitigate environmental effects. The Port's review and permitting process would ensure that the project is implemented in a manner that is consistent with its plans and policies.	No mitigation necessary.	Not adverse.	No impact.
Impact 3.3-5: Substantially Affect Existing Land Uses During Construction Project construction would not affect, modify or prevent access to the other land uses in the project area located on the Ferry Plaza, or in the Ferry Building or Agriculture Building.	No mitigation necessary.	Not adverse.	Less than significant.

Table ES-2
Summary of Impacts and Mitigation Measures for the Action Alternative (Continued)

Impact	Mitigation Measure	NEPA Determination	CEQA Determination
Impact 3.3-6: Potential to Result in Cumulative Impacts on Land Use The project, in combination with other past, present, and reasonably foreseeable future projects, would not result in adverse cumulative land use impacts.	No mitigation necessary.	Project would not contribute to cumulative adverse impacts.	Less than significant.
Parklands and Recreation			
Impact 3.4-1: Direct Impacts on Recreation Resources The project would not substantially change the nature of San Francisco Bay's recreation resources in the project area. The project would result in the expansion and improvement of recreation facilities such as the Embarcadero Plaza and East Bayside Promenade.	No mitigation necessary.	Not adverse.	Less than significant.
Impact 3.4-2: Conflict with Recreation and Public Access Plans and Policies The project would be consistent with applicable recreation and public access plans and policies.	No mitigation necessary.	Not adverse.	Less than significant.
Impact 3.4-3: Indirectly Increase the Use of Existing Neighborhood and Regional Parks The incremental increase in water transit passengers would not be anticipated to result in the substantial deterioration of park and open-space facilities in the project area. In addition, the expansion of publicly accessible facilities (e.g., Embarcadero Plaza and East Bayside Promenade) and improvements to pedestrian circulation at the Ferry Terminal would provide expanded opportunities for passive recreational activities for water transit passengers and other users.	No mitigation necessary.	Not adverse.	Less than significant.
Impact 3.4-4: Indirect Impacts on Recreation Resources Increased vessel traffic would not substantially change the nature of San Francisco Bay's recreation resources in the project area.	No mitigation necessary.	Not adverse.	Less than significant.
Impact 3.4-5: Construction Impacts on Recreation Resources Restricted public access in the proposed construction zone during the construction period could result in temporary short-term impacts on existing recreation resources in the project area.	No mitigation necessary.	Not adverse.	Less than significant.

Table ES-2
Summary of Impacts and Mitigation Measures for the Action Alternative (Continued)

Impact	Mitigation Measure	NEPA Determination	CEQA Determination
Impact 3.4-6: Potential to Result in Cumulative Impacts on Parklands and Recreation The project, in combination with other past, present, and reasonably foreseeable future projects, would not result in adverse cumulative impacts on recreation resources.	No mitigation necessary.	Project would not contribute to cumulative adverse impacts.	Less than significant.
Section 4(f)			
The project would not require the use of any Section 4(f) park or recreation property. The project would result in a *de minimus* impact to Pier 1, the Port of San Francisco Embarcadero Historic District, and the Central Embarcadero Piers Historic District.	Mitigation measures identified for Cultural Resources (CUL-3, CUL-4, CUL-6) and Noise (NOISE-3), discussed below.	Not applicable.	Not applicable.
Air Quality and Global Climate Change			
Impact 3.6-1: Conflict with or Obstruct BAAQMD Air Quality Plan Implementation, Exceed Applicable Air Quality Standards, or Contribute Substantially to an Air Quality Violation The project would not conflict with or obstruct implementation of the BAAQMD air quality plan, exceed applicable air quality standards, or contribute substantially to an existing or projected air quality violation for ROG, NO_X, PM_{10}, and $PM_{2.5}$.	No mitigation necessary.	Not adverse.	Less than significant.
Impact 3.6-2: Expose Sensitive Receptors to Substantial Pollutant Concentrations The project's operational emissions would be less than BAAQMD's thresholds, and consequently would not expose sensitive receptors to substantial pollutant concentrations.	No mitigation necessary.	Not adverse.	Less than significant.
Impact 3.6-3: Create Objectionable Odors During Operation The project would result in an increase in exhaust emissions from the idling of diesel-powered vessels. In addition, operation of an emergency generator could contribute to localized exhaust emission–related odors. However, the vessels and the generator would use "ultra-low sulfur diesel" (ULSD), as required in California, which would minimize odors that typically result from sulfur dioxide emissions. In addition, the predominant wind direction in the project area is from the west, which blows emissions away from sensitive receptors.	No mitigation necessary.	Not adverse.	Less than significant.

Table ES-2
Summary of Impacts and Mitigation Measures for the Action Alternative (Continued)

Impact	Mitigation Measure	NEPA Determination	CEQA Determination
Impact 3.6-4: Construction-Related Emissions of ROG, NO_X, PM_{10}, and $PM_{2.5}$ that Could Exceed Applicable Air Quality Standards If construction activities in the North and South Basins overlapped, the project's unmitigated ROG, PM_{10}, and $PM_{2.5}$ construction-related emissions would not exceed the BAAQMD's average daily emission standards for construction activities; however, the project's unmitigated construction-related NO_X emissions could exceed the BAAQMD standards. Implementation of Mitigation Measures AQ-1 and AQ-2 would reduce the project's construction NO_X emissions below BAAQMD's thresholds.	**Mitigation Measure AQ-1: Construction Phasing** WETA will phase construction activities in such a way that onsite emission-generating construction activities for the North Basin and South Basin improvements do not overlap. **Mitigation Measure AQ-2: Implement BAAQMD-Recommended Best Management Practices** The following BAAQMD-recommended best management practices will be implemented to reduce exhaust emissions: ▪ Minimize the idling time of diesel-powered construction equipment to 2 minutes. ▪ The contractor will demonstrate at various phases of construction (e.g., 25 percent, 50 percent, and completion) that the off-road equipment (more than 50 horsepower) and marine vessels to be used during construction (i.e., owned, leased, and subcontractor vehicles) would achieve a project-wide fleet-average 20 percent NO_X reduction, and a 45 percent PM reduction compared to the most recent CARB fleet average, to the extent feasible. Acceptable options for reducing emissions include the use of late-model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, add-on devices such as particulate filters, and/or other options that may become available. The contractor will document efforts taken to achieve the specified goals, explain why meeting the goals was not feasible (if applicable), and indicate what emissions reduction and equipment use goals were achieved. ▪ Require that all construction equipment, diesel trucks, and generators be equipped with Best Available Control Technology for emission reductions of NO_X and PM. ▪ Require that all contractors use equipment that meets CARB's most recent certification standard for off-road heavy-duty diesel engines.	Not adverse for ROG, PM_{10}, and $PM_{2.5}$. Not adverse for NO_X after implementation of mitigation.	Less than significant for ROG, PM_{10}, and $PM_{2.5}$. Less than significant with mitigation for NO_X.

Table ES-2
Summary of Impacts and Mitigation Measures for the Action Alternative (Continued)

Impact	Mitigation Measure	NEPA Determination	CEQA Determination
Impact 3.6-5: Expose Sensitive Receptors to Substantial Construction-Related Pollutant Concentrations The project's construction emissions could result in $PM_{2.5}$ concentrations that exceed BAAQMD's significance thresholds for exposure of sensitive receptors to this pollutant. With implementation of Mitigation Measures AQ-1 and AQ-2, the project's construction emissions would be less than BAAQMD's thresholds, and consequently would not expose sensitive receptors to substantial pollutant concentrations.	**Mitigation Measure AQ-1: Construction Phasing** **Mitigation Measure AQ-2: Implement BAAQMD-Recommended Best Management Practices**	Not adverse for DPM. Not adverse for $PM_{2.5}$ after implementation of mitigation.	Less than significant for DPM. Less than significant with mitigation for $PM_{2.5}$.
Impact 3.6-6: Create Objectionable Odors During Construction The project would require the use of marine vessels and various types of construction equipment that would produce exhaust emissions and create potentially objectionable odors in the immediate vicinity of the construction site. However, all diesel-fueled equipment and vessels would use ULSD, which would minimize any adverse odors. In addition, the predominant wind direction in the project area is from the west, which blows emissions away from sensitive receptors.	No mitigation necessary.	Not adverse.	Less than significant.
Impact 3.6-7: Result in a Cumulatively Considerable Net Increase of Any Criteria Pollutant for which the Project Region is in Nonattainment The project, in combination with other past, present, and reasonably foreseeable future projects, would not result in adverse air quality cumulative impacts due to increases of criteria pollutants.	No mitigation necessary.	Project would not contribute to cumulative adverse impacts.	Less than significant.
Impact 3.6-8: Expose Sensitive Receptors to Cumulatively Considerable Substantial Pollutant Concentrations The project, in combination with other past, present, and reasonably foreseeable future projects, would not result in adverse cumulative impacts due to exposure of substantial pollutant concentrations on sensitive receptors.	No mitigation necessary.	Project would not contribute to cumulative adverse impacts.	Less than significant.
Impact 3.6-9: Create Cumulatively Considerable Objectionable Odors Affecting a Substantial Number of People The proposed project and the other past, present, and future reasonably foreseeable projects in the project area would all use ULSD for construction and operation, as required by California law, substantially reducing the potential for objectionable odors to be of cumulative concern. There would be no cumulatively adverse impact.	No mitigation necessary.	Project would not contribute to cumulative adverse impacts.	Less than significant.

Table ES-2
Summary of Impacts and Mitigation Measures for the Action Alternative (Continued)

Impact	Mitigation Measure	NEPA Determination	CEQA Determination
Impact 3.6-10: Comply with the BAAQMD GHG Thresholds and Applicable Climate Action Plans Because the proposed project is consistent with and supports the implementation of the City and County of San Francisco's and the Port's Climate Action Plans, the project would not result in substantial long-term cumulatively adverse effects related to global climate change.	No mitigation necessary.	Project would not contribute to cumulative adverse impacts.	Less than significant.
Noise and Vibration			
Impact 3.7-1: Potential Impact of Water Transit Operations on Adjacent Noise-Sensitive Land Uses Operation of the additional water transit vessels at the Ferry Terminal would not exceed FTA thresholds at the noise-sensitive receivers in the study area.	No mitigation necessary.	No impact.	Less than significant.
Impact 3.7-2: Potential Impact of Construction and Demolition Equipment other than Impact Tools on Adjacent Noise-Sensitive Land Uses General construction noise would adversely impact noise-sensitive receivers in the project vicinity. Impacts would be reduced with implementation of Mitigation Measures NOISE-1 and NOISE-2.	**Mitigation Measure NOISE-1: Construction Notification** Prior to the start of construction, the owners and occupants of Pier 1, the Hotel Vitale, the Ferry Building, the Carnelian by the Bay, and the Agriculture Building (i.e., those noise-sensitive receivers listed in Table 3.7-7) will be notified of the project schedule, and that noise- and vibration-generating construction activities are anticipated. Prior to the start of the job, these businesses will be provided with the phone number of the construction foreman, or another responsible party who can be reached for noise- and vibration-related questions and concerns. **Mitigation Measure NOISE-2: Use of Smaller and Quieter Construction Equipment within 15 Feet of the Agriculture Building** When construction activities would occur within 15 feet of the Agriculture Building during a time when the building is occupied, equipment will be selected to minimize the noise generated from construction. The contractor will use smaller and quieter construction equipment with lower noise-emission ratings.	Not adverse after implementation of mitigation.	Less than significant with mitigation.

Table ES-2
Summary of Impacts and Mitigation Measures for the Action Alternative (Continued)

Impact	Mitigation Measure	NEPA Determination	CEQA Determination
Impact 3.7-3: Potential Impact of Pile Driving During Project Construction on Adjacent Noise-Sensitive Land Uses Construction noise from pile-driving activities would be potentially adverse when conducted within 55 feet of the Ferry Building, the Agriculture Building, and Pier 1. This impact would be reduced with implementation of Mitigation Measures NOISE-1 and NOISE-3.	**Mitigation Measure NOISE-1: Construction Notification** **Mitigation Measure NOISE-3: Pile-Driving Technique Selection, and Monitoring; and Corrective Measures to Minimize Noise and Vibration at Nearby Buildings** To reduce the effect of noise and vibration on adjacent land uses and structures, the following measures will be implemented during construction: ▪ Within 55 feet of a building (i.e., the Ferry Building, the Agriculture Building, or Pier 1), vibratory pile driving will be employed to reduce noise levels at the building to below 100 dBA. ▪ When vibratory pile driving occurs within 32 feet of an occupied building (i.e., the Ferry Building, the Agriculture Building, or Pier 1), noise monitoring will be conducted to ensure that noise levels at the building do not exceed 100 dBA. If necessary, noise-reducing measures will be employed to reduce noise levels at the building to below 100 dBA. ▪ When impact pile driving occurs within 540 feet of the Hotel Vitale, vibration monitoring will be performed to ensure that the vibration levels at the hotel do not exceed 75 VdB (the threshold for annoyance for residential land uses). ▪ When vibratory pile driving occurs within 315 feet of the Hotel Vitale, vibration monitoring will be performed to ensure that the vibration levels at the hotel do not exceed 75 VdB (the threshold for annoyance for residential land uses). ▪ When pile driving occurs within 290 feet of the Hotel Vitale, techniques to reduce vibration, such as selection of vibratory pile driving, will be applied to ensure that vibration levels at the hotel do not exceed 75 VdB (the threshold for annoyance for residential land uses). ▪ To ensure that vibration from construction activities does not result in damage to any of the Vibration Category II structures in the project area (the Ferry Building, the Agriculture Building, Carnelian by the Bay, Pier 1, and the seawall), the following measures will be applied:	Not adverse after implementation of mitigation.	Less than significant with mitigation.

Table ES-2
Summary of Impacts and Mitigation Measures for the Action Alternative (Continued)

Impact	Mitigation Measure	NEPA Determination	CEQA Determination
	– When impact pile driving occurs within 73 feet of the building, vibration will be monitored to ensure that the vibration levels at the building do not exceed 0.3 PPV. – Within 42 feet of an existing building, an alternative method to impact pile driving will be employed, such as vibratory pile-driving construction. – When vibratory pile driving occurs within 45 feet of the building, vibration will be monitored to ensure that the vibration levels at the building do not exceed 0.3 PPV. – Pile driving will not be implemented within 17 feet of an existing building unless it can be demonstrated that the activity will not generate vibration levels that would exceed 0.3 PPV at the building. ▪ To ensure that vibration from construction activities does not result in damage to the Ferry Plaza (Vibration Category I), the following measures will be applied: – When impact pile driving occurs within 53 feet of the Ferry Plaza, vibration will be monitored to ensure that the vibration levels at the plaza do not exceed 0.5 PPV. – Within 30 feet of the Ferry Plaza, an alternative method to impact pile driving will be employed, such as vibratory pile-driving construction. – When vibratory pile driving occurs within 33 feet of the Ferry Plaza, vibration will be monitored to ensure that the vibration levels at the plaza do not exceed 0.5 PPV. – Pile driving will not be implemented within 13 feet of the Ferry Plaza, unless it can be demonstrated that the activity will not generate vibration levels that would exceed 0.5 PPV at the plaza. ▪ Should the noise and vibration monitoring on site indicate that levels reach or exceed the thresholds indicated here, all impact work will cease, and corrective measures or alternative construction methods will be implemented to minimize the risk to the subject or structure.		

Table ES-2
Summary of Impacts and Mitigation Measures for the Action Alternative (Continued)

Impact	Mitigation Measure	NEPA Determination	CEQA Determination
Impact 3.7-4: Vibration from Project Construction that Could Result in Human Annoyance Vibration from pile driving could adversely affect the residential uses at the Hotel Vitale, causing annoyance. This impact would be reduced with implementation of Mitigation Measures NOISE-1 and NOISE-3.	**Mitigation Measure NOISE-1: Construction Notification** **Mitigation Measure NOISE-3: Pile-Driving Technique Selection, and Monitoring; and Corrective Measures to Minimize Noise and Vibration at Nearby Buildings**	Not adverse after implementation of mitigation.	Less than significant with mitigation.
Impact 3.7-5: Damage to Structures Caused by Vibration from Project Construction Project construction activities could produce vibration that could exceed thresholds designed to protect the seawall, the Ferry Building, the Ferry Plaza, the Agriculture Building, and Pier 1 from structural damage. Impacts would be reduced with implementation of Mitigation Measures NOISE-3 and NOISE-4.	**Mitigation Measure NOISE-3: Pile-Driving Technique Selection, and Monitoring; and Corrective Measures to Minimize Noise and Vibration at Nearby Buildings** **Mitigation Measure NOISE-4: General Construction Equipment Measures to Minimize Vibration** To reduce construction-related vibration that has the potential to damage structures in the project area, the following measures will be implemented during construction: ▪ Vibrating construction equipment should be placed and operated from the construction barge, if feasible. ▪ When working within 20 feet of the Agriculture Building or the seawall (except when on a barge), equipment that produces less vibration when operated will be selected (refer to Table 3.7-13). If vibration-producing equipment is used within 20 feet of the Agriculture Building or the seawall, vibration will be monitored to ensure that it does not exceed 0.3 PPV. Should the onsite vibration monitoring indicate that levels reach or exceed the thresholds indicated here, all impact work will cease, and corrective measures will be implemented to minimize the risk to the subject or structure.	Not adverse after implementation of mitigation.	Less than significant with mitigation.
Impact 3.7-6. Potential to Result in Cumulative Impacts on Noise The project, in combination with other past, present, and reasonably foreseeable future projects, would not result in adverse cumulative noise impacts.	No mitigation necessary.	Project would not contribute to cumulative adverse impacts.	Less than significant.

Table ES-2
Summary of Impacts and Mitigation Measures for the Action Alternative (Continued)

Impact	Mitigation Measure	NEPA Determination	CEQA Determination
Cultural and Paleontological Resources			
Impact 3.8-1: Substantial Adverse Change to NRHP and/or CRHR Listed, or Eligible to Be Listed, or Unique Archaeological Resources There are no known archeological resources in the project area of potential effect (APE). The inadvertent discovery of archaeological materials during project activities represents a potential project impact; however; implementation of Mitigation Measure CUL-1, would reduce the project's potential to result in impacts to archaeological resources.	**Mitigation Measure CUL-1: Inadvertent Discovery Measures** To avoid any potential adverse effect on inadvertently discovered NRHP- and/or CRHR-eligible or unique archaeological resources as defined in CEQA Guidelines Section 15064.5(a)(c), WETA will distribute an archaeological resource "ALERT" sheet to the project prime contractor, and to any project subcontractor firms involved in soil/sediment disturbing activities in the project site. The "ALERT" sheet will contain sufficient information to allow contractor personnel to identify conditions that may indicate the presence of archaeological resources. Prior to undertaking any soil-disturbing activities (i.e., dredging, pile installation), each contractor is responsible for ensuring that the "ALERT" sheet is circulated to all field personnel, including machine operators, field crew, pile drivers, and supervisory personnel. Should there be any indication of an archeological resource—including, but not limited to, encountering fragments of bone, stone tools, midden soils, structural remains, ship remnants, or historic refuse—during any soil-disturbing activity of the project, WETA will immediately suspend any soil-disturbing activities in the vicinity of the discovery. In the event of such a discovery, WETA will retain the services of a qualified archaeological consultant. The archaeological consultant will advise WETA as to whether the discovery is an archaeological resource that retains sufficient integrity, and is of potential scientific/historical/cultural significance. If an archaeological resource is present, the archaeological consultant will identify and evaluate the archaeological resource. The archaeological consultant will make a recommendation to WETA as to what action or additional measures, if any, are warranted, including coordination with appropriate agencies. Measures might include preservation *in situ* of the archaeological resource; an archaeological monitoring program; or an archaeological evaluation program. If an archaeological resource cannot be avoided by project activities, the archaeologist will prepare an Archaeological Evaluation Plan (AEP). The AEP will	Not adverse after implementation of mitigation. Section 106 Finding: No Effect	Less than significant with mitigation.

Table ES-2
Summary of Impacts and Mitigation Measures for the Action Alternative (Continued)

Impact	Mitigation Measure	NEPA Determination	CEQA Determination
	create a program to determine the potential of the expected resource to meet the CRHR criteria—particularly Criterion 4, the resource's potential to address important research questions identified in the AEP—and the archaeologist will submit this plan to WETA for approval. The archaeologist will then conduct an evaluation consistent with the WETA-approved AEP. The methods and findings of the evaluation will be presented in an Archaeological Evaluation and Effects Report, which will be submitted to WETA for review on completion.		
Impact 3.8-2: Disturbance of Human Remains, Including those Interred Outside of a Formal Cemetery There are no known human remains in the project APE. The inadvertent disturbance of human remains during construction represents a potential project impact; however, implementation of Mitigation Measures CUL-1 and CUL-2 would reduce the project's potential to result in impacts to human remains.	**Mitigation Measure CUL-1: Inadvertent Discovery Measures** **Mitigation Measure CUL-2: Treatment of Human Remains** The treatment of human remains and associated or unassociated funerary objects discovered during any soil-disturbing activity will comply with applicable state laws. In the event the discovery is composed entirely of, or includes, human skeletal remains, in addition to implementation of Mitigation Measure CUL-1, Inadvertent Discovery Measures, construction activities will immediately cease and WETA's project representative will immediately contact the San Francisco County coroner to evaluate the remains, following the procedures and protocols set forth in Section 15064.5 (e)(1) of the CEQA Guidelines. If the coroner determines that the remains are Native American, WETA will contact the NAHC, who will appoint a Most Likely Descendant (MLD), in accordance with Health and Safety Code Section 7050.5, subdivision (c), and PRC 5097.98 (as amended by AB 2641). In accordance with PRC 5097.98, WETA and the Port (as landowner/administrator) will ensure that, according to generally accepted cultural or archaeological standards or practices, the immediate vicinity of the Native American human remains is not damaged or disturbed by further development activity until WETA and the Port have discussed and conferred with the MLD, as prescribed in this section (PRC 5097.98), regarding their recommendations, if applicable, taking into account the possibility of multiple human remains. WETA, the Port, and the MLD will make all reasonable efforts to develop an agreement for the treatment, with appropriate dignity, of human remains and associated or unassociated funerary objects (CEQA Guidelines Sec. 15064.5[d]). The agreement	Not adverse after implementation of mitigation.	Less than significant with mitigation.

Table ES-2
Summary of Impacts and Mitigation Measures for the Action Alternative (Continued)

Impact	Mitigation Measure	NEPA Determination	CEQA Determination
	should take into consideration the appropriate excavation, removal, recordation, analysis, custodianship, curation, and final disposition of the human remains and associated or unassociated funerary objects. PRC allows 48 hours to reach agreement on these matters. If the MLD and the other parties do not agree on the reburial method, the project will follow Section 5097.98(b) of the PRC, which states, "the landowner or his or her authorized representative will re-inter the human remains and items associated with Native American burials with appropriate dignity on the property in a location not subject to further subsurface disturbance."		
Impact 3.8-3: Cause a Direct Adverse Effect or Impact to Historic Properties or Resources Should it be determined that the fendering along Pier 1 requires replacement, the project could directly affect historic properties or resources. During the Final Design of the project, the existing fendering along the southern edge of Pier 1 would be inspected to determine whether replacement is necessary. Implementation of Mitigation Measures CUL-3 and CUL-4 require application of measures during construction to avoid inadvertent damage; implementation of a response and repair plan, should any inadvertent damage occur during construction; and replacement of the fendering along Pier 1, in a manner consistent with the *Secretary of the Interior's Standards for the Treatment of Historic Properties, Standards for Rehabilitation*.	**Mitigation Measure CUL-3: Replacement in Accordance with Secretary of Interior Standards for Rehabilitation** If replacement of the existing pile fendering attached to the southern side of Pier 1 is deemed necessary, the replacement work will be conducted in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties* (NPS, 2001), specifically adhering to the Standards for Rehabilitation. Project compliance with the Secretary of the Interior's Standards and applicable guidelines will ensure that Pier 1 retains sufficient historic integrity to convey its significance for listing in the NRHP and CRHR, therefore avoiding and minimizing the adverse effect or significant impact potentially caused by this undertaking. When replacing the pile fendering on the southern side of the building, in-kind replacement materials will be used to the greatest extent feasible. The replacement timber pilings will have a diameter similar to that of the original pilings. The number of replacement pilings will match the number of pilings being removed (33), and the new pilings will be spaced similarly to the originals. The selection of replacement pilings should include input and review from an architectural historian who meets the Secretary of the Interior's Professional Qualification Standards (as defined in 36 CFR, Part 61). The project's compliance with the Standards for Rehabilitation will result in Pier 1 retaining integrity of design, workmanship, materials, feeling, association, and	Not adverse after implementation of mitigation. Section 106 Finding: No Adverse Effect.	Less than significant with mitigation.

Table ES-2
Summary of Impacts and Mitigation Measures for the Action Alternative (Continued)

Impact	Mitigation Measure	NEPA Determination	CEQA Determination
	location. Although overall, the project will result in some diminished integrity of material, the elements that comprise the building's significant form, plan, and design, illustrating its important historic function and aesthetic value, will be retained; and the impact would be avoided and minimized. **Mitigation Measure CUL-4: Plan for Protection Against, and Response to, Inadvertent Damage** **Protection and Monitoring to Avoid Effects.** To avoid and minimize adverse effects that would inadvertently cause damage to historic properties during project construction activities, the project construction zone will be clearly delineated using orange construction fencing or other similar suitable materials, and designated as a restricted area. Mitigation Measure NOISE-3 would also help reduce this impact. **Response to and Repair of Inadvertent Damage.** Should project actions cause inadvertent damage to historic properties, project work will cease, and the response plan prepared prior to construction for repair of damage will be implemented. The plan and response will include input and review from an architectural historian who meets the Secretary of the Interior's Professional Qualification Standards (as defined in 36 CFR, Part 61). Inadvertent damage to the historic properties resulting from the project will be repaired in accordance with the Secretary of the Interior's *Standards for Rehabilitation*. The response plan will include photographic documentation of the condition of the portions of historic properties prior to project implementation, to establish the baseline condition for assessing damage. Prior to implementation, WETA will provide the plans for any repairs to SHPO for review and comment, to ensure conformance with the Secretary of the Interior's *Standards for Rehabilitation*.		

Table ES-2
Summary of Impacts and Mitigation Measures for the Action Alternative (Continued)

Impact	Mitigation Measure	NEPA Determination	CEQA Determination
Impact 3.8-4: Adverse Effects to Unidentified Significant Paleontological Resources There are no known paleontological resources in the project area. However, the area is considered sensitive for paleontological resources. Implementation of Mitigation Measure CUL-5, would reduce potential impacts to unknown significant paleontological resources.	**Mitigation Measure CUL-5: Stop Construction if Buried Paleontological Resources Are Discovered** In the event that paleontological resources are discovered during construction, sediment-disturbing activities within 50 feet of the find will be temporarily halted or diverted until the discovery is examined by a qualified paleontologist (in accordance with Society of Vertebrate Paleontology standards). The paleontologist will document the discovery as needed, evaluate the potential resource, and assess the significance of the find under the criteria set forth in CEQA Guidelines Section 15064.5. The paleontologist will notify the appropriate agencies to determine procedures that would be followed before construction is allowed to resume at the location of the find. If the project proponent determines that avoidance is not feasible, the paleontologist will prepare a salvage plan in accordance with the SVP and CEQA Guidelines for mitigating the effect of the project on the qualities that make the resource important. The plan will be submitted to WETA for review and approval prior to implementation.	Not adverse after implementation of mitigation.	Less than significant with mitigation.
Impact 3.8-5: Potential Indirect Effects of Visual or Noise and Vibration Elements on Historic Properties or Resources There is potential for the design of the project's weather protection canopies to affect the adjacent historic properties within the APE. With implementation of Mitigation Measure CUL-6, indirect adverse visual effects from the Final Design of the weather protection canopy element of the proposed project would be avoided. Additionally, there is the potential that vibration from construction could indirectly affect the historic properties or resources in APE. These potential effects would be avoided by implementing Mitigation Measure NOISE-3.	**Mitigation Measure CUL-6: Consultation with Local Agencies Regarding Final Design of Weather Protection Canopies and Secretary of the Interior's Standards for Rehabilitation** The final design of the weather protection canopies will be developed in consultation with the Port's Waterfront Design Advisory Committee and the San Francisco Historic Preservation Commission, and consistent with the *Secretary of the Interior's Standards for the Treatment of Historic Properties, Standards for Rehabilitation* (NPS, 2001). The basic scale and massing of these project features is described in Section 6.1, but the details of their appearance has not been finalized. Mitigation Measure CUL-6 requires consultation regarding final design of weather protection canopies, and application of the Secretary of the Interior's Standards to the final design. Project compliance with the Secretary of the Interior's Standards and applicable guidelines will ensure that the weather protection canopy element of the proposed project would not adversely affect	Not adverse after implementation of mitigation. Section 106 Finding: No Adverse Effect.	Less than significant with mitigation.

Table ES-2
Summary of Impacts and Mitigation Measures for the Action Alternative (Continued)

Impact	Mitigation Measure	NEPA Determination	CEQA Determination
	any of the historic properties in the Architectural APE or Focused Architectural APE. The standards for rehabilitation recommend "designing new exterior additions to historic buildings or adjacent new construction which is compatible with the historic character of the site and which preserves the historic relationship between the building or buildings and the landscape" (NPS 2001, 105). The guidelines also state that new additions, exterior alterations, or related new construction should not destroy historic materials, features, and spatial relationships that characterize the historic property. The new work should be compatible with the historic materials, features, size, scale and proportion, and massing to protect the integrity of the property and its environment. New additions and adjacent or related new construction should be undertaken in such a manner that, if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired. These guidelines, and others for historic setting, is and will continue to be incorporated in the design of the project features at the historic Ferry Building and the surrounding historic properties. The consultation and application of the Secretary of the Interior's Standards would ensure that historic integrity is retained, and that the properties would remain eligible for listing in the NRHP and CRHR, therefore avoiding potential adverse effects. The final design for the project will include consultation and review by the Port's Waterfront Design Advisory Committee and the San Francisco Historic Preservation Commission. Through the design review process, the Waterfront Design Advisory Committee is responsible for ensuring that project improvements comply with the Secretary of the Interior's Standards for Historic Rehabilitation, and that projects would not adversely affect historic properties or districts along the waterfront. Given the resources in the project area, the San Francisco Historic Preservation Commission will be involved in the design review process. The public is also invited to participate in the design review process. WETA will submit the preliminary final design for the weather protection canopies to the Port's Waterfront Design Advisory Committee and the San		

Table ES-2
Summary of Impacts and Mitigation Measures for the Action Alternative (Continued)

Impact	Mitigation Measure	NEPA Determination	CEQA Determination
	Francisco Historic Preservation Commission for review and comment; input received during this review will be incorporated in the final design plans. This process will ensure that the final design would also avoid adverse effects to historic properties or resources in either the Architectural APE or Focused Architectural APE. **Mitigation Measure NOISE-3: Pile-Driving Technique Selection, and Monitoring; and Corrective Measures to Minimize Noise and Vibration at Nearby Buildings**		
Impact 3.8-6: Potential to Result in Cumulative Impacts on Archaeological Resources The project, in combination with other past, present, and reasonably foreseeable future projects, would not result in adverse cumulative archaeological impacts.	No mitigation necessary.	Project would not contribute to cumulative adverse impacts.	Less than significant.
Impact 3.8-7: Potential to Result in Cumulative Impacts on Historic Properties The project, in combination with other past, present, and reasonably foreseeable future projects, would not result in adverse cumulative impacts to historic properties.	No mitigation necessary.	Project would not contribute to cumulative adverse impacts.	Less than significant.
Impact 3.8-8: Potential to Result in Cumulative Impacts on Paleontological Resources The project, in combination with other past, present, and reasonably foreseeable future projects, would not result in adverse cumulative paleontological impacts.	No mitigation necessary.	Project would not contribute to cumulative adverse impacts.	Less than significant.
Biological Resources			
Impact 3.9-1: Potential Adverse Effects of Maintenance Dredging on Special-Status or Commercially Valuable Marine Species The project's maintenance dredging activities have the potential to impact special-status and commercially valuable marine species, including their habitats. Mitigation Measure BIO-1 includes measures to reduce the impacts on special-status and commercially valuable marine species from maintenance dredging.	**Mitigation Measure BIO-1: Dredging and Pile-Driving Measures** The following measures will be implemented to reduce the impacts of dredging and pile driving on special-status fish and other aquatic species: ▪ During impact pile driving of steel piles, the applicant will use a bubble curtain or other attenuation device to attenuate underwater sound levels;	Not adverse after implementation of mitigation.	Less than significant with mitigation.

Table ES-2
Summary of Impacts and Mitigation Measures for the Action Alternative (Continued)

Impact	Mitigation Measure	NEPA Determination	CEQA Determination
	▪ Impact hammers will be cushioned using a 12-inch-thick wood cushion block; ▪ Only a single impact hammer will be operated at a time; and ▪ If a mechanical dredge is used, the applicant will use the smallest possible dredge head to reduce the likelihood of fish becoming entrained in the mechanical dredge. WETA plans to conduct all piling installation and dredging between approved work windows, between June 1 and November 30, when the likelihood of sensitive fish species being present in the work area is minimal (LTMS, 1998). Until Final Design is completed and a contractor is selected, WETA will not be able to make a final determination as to whether piling installation or dredging must occur at times other than the approved work window. In addition, factors beyond WETA's control, such as requirements of other agencies or conflicting timing requirements may prevent WETA from conducting all piling installation and dredging within the approved work window. The project sponsors will undertake formal FESA and CESA consultation with NOAA, NMFS, and CDFW to identify avoidance and minimization methods that will be implemented to reduce effects on sensitive marine resources. Methods may include monitoring by a qualified biologist, and halting of dredging or pile-driving activities for a specific period if spawning activity is noted within the construction area. In addition to the avoidance and minimization measures identified here, the project sponsors will comply with additional measures and requirements identified through consultation with NOAA, NMFS and CDFW.		

Table ES-2
Summary of Impacts and Mitigation Measures for the Action Alternative (Continued)

Impact	Mitigation Measure	NEPA Determination	CEQA Determination
Impact 3.9-2: Potential Adverse Effects of Permanent Fill in San Francisco Bay on Benthic Habitat and Marine Species The proposed project would result in a net increase of 345 square feet (0.008 acre) of fill in bottom habitat in the North and South Basins; this small loss of benthic habitat would be considered negligible in this environment. The increased area of shade that would result from the project is small relative to the size of the surrounding open waters of San Francisco Bay, and the impact on phytoplankton production and the food chain is expected to be negligible. Reduction in light resulting from overwater structures could result in a slight increase in predation on larval and young fish in the local project area.	No mitigation necessary.	Not adverse.	Less than significant.
Impact 3.9-3: Interference with the Movement of Resident or Migratory Fish or Wildlife Species Due to Modification of Ferry Terminal Facilities No solid structures, such as a breakwater, are proposed; therefore, the project would not interfere with the movement of resident or migratory fish or other wildlife species.	No mitigation necessary.	Not adverse.	Less than significant.
Impact 3.9-4: Potential Adverse Effect on Special-Status or Commercially Valuable Marine Species from Dredging Activities during Construction The project's construction dredging activities have the potential to impact special-status and commercially valuable marine species, including their habitats. With implementation of Mitigation Measure BIO-1, the impacts of construction dredging on special-status and commercially valuable marine species would be reduced and would not be adverse.	**Mitigation Measure BIO-1: Dredging and Pile-Driving Measures**	Not adverse after implementation of mitigation.	Less than significant with mitigation.
Impact 3.9-5: Potential Adverse Effects to Special-Status Fish and Marine Mammals From Underwater Sound Generated During Pile Driving Underwater sound and acoustic pressure resulting from pile driving could affect aquatic resources (e.g., fish and marine mammals) by causing behavioral avoidance of the construction area and/or injury to sensitive species. To minimize the effect of project construction noise on fish and marine mammals (i.e., avoidance behavior, fleeing responses, temporary hearing impairment, or the temporary cessation of feeding), Mitigation Measures BIO-1 and BIO-2 will be implemented.	**Mitigation Measure BIO-1: Dredging and Pile-Driving Measures** **Mitigation Measure BIO-2: Hydroacoustic and Biological Monitoring and Avoidance Measures** WETA will minimize sound level exposure from the project to marine mammals and fish. The performance standards for these minimization efforts are described later in this measure. To provide the final implementation level details, WETA will develop a Hydroacoustic and Biological Monitoring Plan in consultation with NMFS, prior to the start of construction. This plan will provide details on the methods used to monitor and verify sound levels	Not adverse after implementation of mitigation.	Less than significant with mitigation.

Table ES-2
Summary of Impacts and Mitigation Measures for the Action Alternative (Continued)

Impact	Mitigation Measure	NEPA Determination	CEQA Determination
	during pile-driving activities. The plan will include specific measures to minimize exposure of marine mammals and fish to high sound levels. At a minimum, avoidance and minimization measures will meet the following performance standards and include the following methods: ▪ Underwater noise levels will be measured during pile-driving activities to determine the distance at which sound levels do not exceed injury thresholds for fish (206 dB) or marine mammals (Level A thresholds [180 dB RMS or 190 dB RMS]). ▪ A "soft start" technique shall be employed in all pile driving to give marine mammals an opportunity to vacate the area. ▪ If an activity produces underwater sound levels that exceed the injury threshold for fish or marine mammals, work will be stopped and sound levels will be reduced through noise control measures such as the installation of NMFS-approved attenuation devices (e.g., bubble curtains) or modification of construction methods (such as using cushioning between the hammer and pile). ▪ An NMFS-approved biological monitor will monitor the installation of at least 10 percent of the 24- to 42-inch-diameter steel piles that will be installed by impact hammer. During initial impact pile-driving efforts, a default exclusion zone at a distance of 500 feet from the pile will be monitored for the presence of marine mammals. The area will be monitored for 30 minutes prior to impact driving. No driving will be conducted until the area has been free of marine mammal sightings for 30 minutes. If no marine mammals are sighted, driving will begin and hydroacoustic monitoring will be conducted.		
Impact 3.9-6: Interfere with the Movement of Resident or Migratory Fish or Wildlife Species During Construction The noise and in-water disturbance associated with project construction could cause fish and wildlife species to temporarily avoid the immediate construction area when work is being conducted; however, project construction would not substantially limit the available habitat or movement of fish, seabirds, or marine mammals in San Francisco Bay.	No mitigation necessary.	Not adverse.	Less than significant.

Table ES-2
Summary of Impacts and Mitigation Measures for the Action Alternative (Continued)

Impact	Mitigation Measure	NEPA Determination	CEQA Determination
Impact 3.9-7: Potential to Result in Cumulative Impacts on Biological Resources The project, in combination with other past, present, and reasonably foreseeable future projects, could result in adverse cumulative impacts on biological resources; however, the project's contribution to these cumulative impacts would not be cumulatively considerable.	No mitigation necessary.	Project's contribution to cumulative impacts would not be considerable.	Less than significant.
Aesthetics and Visual Resources			
Impact 3.10-1: Potential to Substantially Alter or Block Views of Scenic Vistas or Resources The new project elements would interrupt views of San Francisco Bay from the project area from specific vantage points. However, because an abundance of views of San Francisco Bay would still exist and because the project would improve the public's access to these views, the project would not substantially alter or block views of scenic vistas or scenic resources.	No mitigation necessary.	Not adverse.	Less than significant.
Impact 3.10-2: Potential to Degrade or Contrast with the Visual or Aesthetic Aspects of the Existing Landscape The project would add new features, but these features are not anticipated to degrade the scale, visual quality, or visual context of the area.	No mitigation necessary.	Not adverse.	Less than significant.
Impact 3.10-3: Potential for Light and Glare to Adversely Affect Views, People, or Properties Levels and types of light and glare would be consistent with the area, would not have an adverse impact on daytime or nighttime views in the area, and would not result in adverse effects to people or properties.	No mitigation necessary.	Not adverse.	Less than significant.
Impact 3.10-4. Potential to Substantially Alter or Block Views or Degrade or Contrast with Existing Landscape During Construction The presence of equipment, barges, and construction staging and material storage on site during construction would contrast with and could temporarily degrade the visual quality or context of the existing landscape. Views of construction equipment and materials storage would be noticeable, but consistent with the urban and maritime nature of the waterfront, and therefore are not anticipated to be adverse.	No mitigation necessary.	Not adverse.	Less than significant.

Table ES-2
Summary of Impacts and Mitigation Measures for the Action Alternative (Continued)

Impact	Mitigation Measure	NEPA Determination	CEQA Determination
Impact 3.10-5. Potential to Result in Cumulative Impacts on Aesthetics or Visual Resources The project, in combination with other past, present, and reasonably foreseeable future projects, could result in cumulative impacts on aesthetics or visual resources; however, cumulative impacts are not anticipated to be substantially adverse, and the project would not have a cumulatively considerable contribution to cumulative impacts.	No mitigation necessary.	Project would not contribute to cumulative adverse impacts.	Less than significant.
Hydrology and Water Quality			
Impact 3.11-1: Potential Impacts of Maintenance Dredging on Water Quality Effects to water quality would be minimal due to low volume of dredged material, infrequent dredging operations, and in-place requirements for implementation of dredging BMPs.	No mitigation necessary.	Not adverse.	Less than significant.
Impact 3.11-2: Potential Degradation of Water Quality Caused by Operation of Project Improvements The proposed project would be designed, constructed, and maintained to prevent or minimize the discharge of pollutants into San Francisco Bay. Effects on water quality during project operations would be minimal with implementation of BMPs and adherence to water quality regulations.	No mitigation necessary.	Not adverse.	Less than significant.
Impact 3.11-3: Substantially Increase San Francisco Bay Fill and Compromise Water Quality The project's overall increase of fill in San Francisco Bay would be negligible in comparison to the total surface area of San Francisco Bay (i.e., approximately 0.9 acre of fill compared to approximately 327,000 acres of open waters in San Francisco Bay [BCDC, 2008]). With this slight increase in the amount of fill into San Francisco Bay, along with the design and arrangement of the piles and facilities, the project would not adversely affect oxygen levels, water circulation, or tidal interchange in San Francisco Bay.	No mitigation necessary.	Not adverse.	Less than significant.

Table ES-2
Summary of Impacts and Mitigation Measures for the Action Alternative (Continued)

Impact	Mitigation Measure	NEPA Determination	CEQA Determination
Impact 3.11-4: Potential Impact to People and Structures from Tsunami The Action Alternative would include improvements to lessen potential damage from a tsunami, and the likelihood of a tsunami occurring that could result in substantial damage to existing, improved, and new facilities is very low.	No mitigation necessary.	Not adverse.	Less than significant.
Impact 3.11-5: Potential Flooding Impacts to New Project Facilities Because the Action Alternative would be designed to address flooding and sea-level rise and provide sufficient freeboard for new structures, effects on operations due to flooding would not be adverse.	No mitigation necessary.	Not adverse.	Less than significant.
Impact 3.11-6: Potential Impacts to Shoreline and Project Area Facilities from Wake Wash New and improved facilities would be designed to withstand wake-wash impacts. Vessel would be operated to minimize wake and wake wash from vessel operations would not adversely affect existing facilities in the project area.	No mitigation necessary.	Not adverse.	Less than significant.
Impact 3.11-7: Potential Impacts of Dredging and Pile Removal and Placement Activities on Water Quality Dredging and pile-driving activities would result in short-term effects on water quality, which would be minimized with implementation of BMPs required through the adherence to water quality permits and approvals.	No mitigation necessary.	Not adverse.	Less than significant.
Impact 3.11-8: Potential Degradation of Water Quality Caused by Demolition and Construction Activities The potential effects on water quality from demolition and construction activities would be minimized with implementation of BMPs, and adherence to water quality permits and approvals.	No mitigation necessary.	Not adverse.	Less than significant.
Impact 3.11-9: Potential to Result in Cumulative Impacts to Hydrology or Water Quality The project, in combination with other past, present, and reasonably foreseeable future projects, could result in adverse cumulative impacts on water quality; however, the project's contribution to these cumulative impact would not be cumulatively considerable.	No mitigation necessary.	Project's contribution to cumulative impacts would not be considerable.	Less than significant.

Table ES-2
Summary of Impacts and Mitigation Measures for the Action Alternative (Continued)

Impact	Mitigation Measure	NEPA Determination	CEQA Determination
Hazards and Hazardous Materials			
Impact 3.12-1: Potential Public or Environmental Exposure From the Routine Transport, Use, and Disposal of Hazardous Materials Compliance with existing regulatory requirements would minimize potential exposure of site personnel and the public to routine transport, use, and disposal of hazardous materials, and would also protect against potential environmental contamination. Therefore, no adverse impact would be expected.	No mitigation necessary.	Not adverse.	Less than significant.
Impact 3.12-2: Project Would be Located on a Government List of Hazardous Materials Sites The Phase I ESA prepared for the project in 2012 reported that no active investigations of hazardous materials release sites in the project site or within 750 feet of the project site. Historical site uses may have affected sediment below the site; these releases or potential releases are considered not adverse because regulatory agencies have not taken, or propose to take, enforcement action.	No mitigation necessary.	Not adverse.	Less than significant.
Impact 3.12-3: Emission of Hazardous Materials within ¼ Mile of a School Compliance with existing regulatory requirements would minimize the potential emissions of hazardous materials due to the use and transport of diesel fuel required by the back-up generator. Therefore, no adverse impact to schools would be expected.	No mitigation necessary.	Not adverse.	Less than significant.
Impact 3.12-4: Potential Impacts to Implementation of an Adopted Emergency Response Plan The project would not be expected to impair implementation of, or interfere with, any emergency operation or evacuation plans in the vicinity of the project site. Implementation of the project would improve WETA's ability to respond to emergencies by increasing the Ferry Terminal's capacity for implementing a major evacuation.	No mitigation necessary.	Not adverse.	Less than significant.
Impact 3.12-5: Upset and Accidents Involving Hazardous Materials Use and Storage During Construction Activities Hazardous materials (e.g., diesel fuel, hydraulic oil, lubricants, paints, or other hazardous materials) would be transported and used on site for proposed construction activities. In addition, construction vehicles and	**Mitigation Measure HAZ-1: Prepare a Hazardous Materials Management Plan** WETA will prepare an HMMP for review and approval by the Port prior to moving equipment to the project site for construction and demolition activities. The requirements of the HMMP for the	Not adverse after implementation of mitigation.	Less than significant with mitigation.

Table ES-2
Summary of Impacts and Mitigation Measures for the Action Alternative (Continued)

Impact	Mitigation Measure	NEPA Determination	CEQA Determination
equipment would be used on site that could accidentally release hazardous materials, such as oils, grease, or fuels. Demolition activities would require the removal and potential temporary storage of piles that have been treated with creosote, or that contain other potentially hazardous substances. Accidental releases of hazardous materials could result in adverse health effects to construction workers, the public, and the environment. Implementation of Mitigation Measure HAZ-1, Prepare a Hazardous Materials Management Plan, would reduce this impact.	project will govern the onsite management of hazardous materials, including spill prevention; and the offsite disposal of hazardous wastes. The HMMP, at a minimum, will include the following requirements: ▪ **Hazardous Materials Storage and Disposal.** The construction contractor will be responsible for the proper storage and disposal of any hazardous materials or wastes in accordance with all federal, state, and local laws and regulations. This may involve obtaining permits from the local regulatory agency for the storage of hazardous materials, and obtaining a Waste Generators Identification Number from the state for disposal of any hazardous wastes generated at the site. The HMMP shall include requirements for appropriate material storage; spill control, containment, and cleanup; vehicle and construction equipment inspections; emergency preparedness; and worker training. ▪ **Lead and Asbestos Management.** Prior to any demolition activities, a lead-based paint and asbestos survey of the structures shall be conducted. Based on the results of the survey, it will be determined if any lead-based paint or asbestos is present that requires abatement prior to demolition of the structures. Results of this survey shall be included in the HMMP. Any abatement required shall be completed in accordance with all federal, state, and local regulatory requirements by properly licensed abatement contractors, before demolition of the structures. ▪ **Wood Waste Management.** Procedures for implementation of DTSC's Alternative Management Standards for Treated Wood Waste will be included in the HMMP, including employee training in waste management, segregation of the wood waste from other wastes, appropriate storage and labeling, and transportation to an authorized treated wood waste facility. ▪ **Universal Waste Management.** A survey of common items that are regulated as "universal wastes" by the State of California (e.g., fluorescent lighting tubes and ballasts, and mercury thermometers) shall also be conducted. Provisions for abatement		

Table ES-2
Summary of Impacts and Mitigation Measures for the Action Alternative (Continued)

Impact	Mitigation Measure	NEPA Determination	CEQA Determination
	and removal of these materials prior to demolition in accordance with Cal/OSHA regulations shall be addressed in the HMMP. ▪ **Reporting.** The findings of the hazardous materials abatement activities shall be documented by a qualified environmental professional, and submitted to the Port and the SFDPH prior to the issuance of construction and demolition permits.		
Impact 3.12-6: Demolition, Transport, and Disposal of Structures and Dredge Material Containing Hazardous Materials Demolition activities would require the removal and potential temporary storage of piles that have been treated with creosote, or that contain other potentially hazardous substances, and dredging of potentially contaminated sediment. Implementation of Mitigation Measure HAZ-1, Prepare a Hazardous Material Management Plan, would reduce this impact.	**Mitigation Measure HAZ-1: Prepare a Hazardous Materials Management Plan**	Not adverse after implementation of mitigation.	Less than significant with mitigation.
Impact 3.12-7: Potential to Result in Cumulative Impacts from Hazards and Hazardous Materials The project, in combination with other past, present, and reasonably foreseeable future projects, would not result in adverse cumulative hazards and hazardous materials impacts.	No mitigation necessary.	Project would not contribute to cumulative adverse impacts.	Less than significant.
Geology, Soils, and Seismicity			
Impact 3.13-1: Increased Risks to People and Structures During a Seismic Event, Fault Rupture, or Seismic Shaking Geotechnical investigations would be conducted, and engineering design would comply with the applicable building codes, thereby minimizing the potential risk for damage to structures and humans from seismic shaking, liquefaction, and subsidence.	No mitigation necessary.	Not adverse.	Less than significant.
Impact 3.13-2: Potential Impacts to Sediment or Geology from Maintenance Dredging Minor maintenance dredging would be required at Gates F and G every 3 to 4 years, and would require removal of approximately 5,000 to 10,000 cubic yards (cy) of material; however, this amount of material removal would be negligible in the context of San Francisco Bay.	No mitigation necessary.	Not adverse.	Less than significant.

Table ES-2
Summary of Impacts and Mitigation Measures for the Action Alternative (Continued)

Impact	Mitigation Measure	NEPA Determination	CEQA Determination
Impact 3.13-3: Potential Impacts to Sediment or Geology from Construction Activities Project construction would not adversely affect sediments, sediment stability, or geology in the project area.	No mitigation necessary.	Not adverse.	Less than significant.
Impact 3.13-4: Potential to Result in Cumulative Impacts to Geology, Soils and Seismicity No cumulative seismic impacts would be expected. The cumulative effect of dredging activities in San Francisco Bay could impact sediment volume transport in San Francisco Bay, but the project's contribution would not be considerable.	No mitigation necessary.	Project would not contribute to cumulative adverse impacts.	Less than significant.
Energy Consumption			
Impact 3.14-1: Wasteful, Inefficient, or Unnecessary Consumption of Energy during Project Operation The project's use of lighting would not result in wasteful, inefficient, or unnecessary consumption of energy resources. Emergency generators would only be used during emergencies, and would not result in a significant increase of fuel by the project.	No mitigation necessary.	Not adverse.	Less than significant.
Impact 3.14-2: Significant Demand on Regional Energy Supply or Requirement of Substantial Additional Capacity The project's energy consumption would have no adverse impacts to regional energy supply, or require substantial additional capacity.	No mitigation necessary.	Not adverse.	Less than significant.
Impact 3.14-3: Energy Consumption Increases Related to Project Construction A temporary increase in electricity and fuel consumption during construction would not have adverse impacts to energy and fuel consumption increases.	No mitigation necessary.	Not adverse.	Less than significant.
Impact 3.14-4. Potential to Result in Cumulative Impacts on Energy Consumption The project, in combination with other past, present, and reasonably foreseeable future projects, would not result in adverse cumulative energy consumption impacts.	No mitigation necessary.	Project would not contribute to cumulative adverse impacts.	Less than significant.

Table ES-2
Summary of Impacts and Mitigation Measures for the Action Alternative (Continued)

Impact	Mitigation Measure	NEPA Determination	CEQA Determination
Utilities and Public Services			
Impact 3.15-1: Require the Construction of New or Physically Altered Governmental Facilities The incremental increase in users from the proposed project would not be anticipated to substantially increase demand or response times for police, fire protection, or emergency services, or require the construction of new, or physical alteration of existing, fire protection or emergency services facilities.	No mitigation necessary.	Not adverse.	Less than significant.
Impact 3.15-2: Potential to Significantly Affect Water, Wastewater, and Solid Waste Supplies and/or Services The increase in the number of passengers moving through the Ferry Terminal due to the project would not adversely affect water supply, wastewater, or solid waste facilities.	No mitigation necessary.	Not adverse.	Less than significant.
Impact 3.15-3. Potential to Require New Stormwater Drainage Facilities With the proposed improvements to the onsite stormwater drainage, facilities operated by the City and County of San Francisco would not be affected, and stormwater would be managed on site. Therefore, no adverse impacts are anticipated.	No mitigation necessary.	Not adverse.	Less than significant.
Impact 3.15-4: Insufficient Permitted Capacity of Solid Waste Landfill Construction waste generated by the project that could not be diverted (recycled or reused) would be accepted at the Altamont Landfill, which has sufficient capacity to accommodate the project.	No mitigation necessary.	Not adverse.	Less than significant.
Impact 3.15-5: Potential to Violate Federal, State, and Local Statutes and Regulations Related to Solid Waste The proposed project would comply with all pertinent federal, state, and local requirements regarding solid waste.	No mitigation necessary.	Not adverse.	Less than significant.

Table ES-2
Summary of Impacts and Mitigation Measures for the Action Alternative (Continued)

Impact	Mitigation Measure	NEPA Determination	CEQA Determination
Impact 3.15-6: Potential to Adversely Impact Existing Underground Utilities During Construction Activities Project construction could disrupt or damage underground utilities in the project area, a potentially significant impact. Implementation of Mitigation Measure UTIL-1 would reduce this potential impact.	**Mitigation Measure UTIL-1: Consultation and Coordination with Utility Providers** Prior to the start of construction activities, WETA will consult with public utility providers who have infrastructure in the immediate vicinity of the proposed project improvements, to determine the exact location and depth of utility lines.	Not adverse after implementation of mitigation.	Less than significant with mitigation.
Impact 3.15-7: Potential to Result in Cumulative Impacts on Utilities and Public Services The project, in combination with other past, present, and reasonably foreseeable future projects, would not result in adverse cumulative impacts on utilities and public services.	No mitigation necessary.	Project would not contribute to cumulative adverse impacts.	Less than significant.
Socioeconomics			
Impact 3.16-1: Potential to Cause Adverse Changes in the Character and Cohesion of or Physically Divide or Disrupt an Established Neighborhood The project would not adversely affect an existing residential community, because no residential community exists at the project site, and the closest residential uses are west of The Embarcadero. The project would not disrupt or divide the physical arrangement of an established community, or remove neighborhood amenities.	No mitigation necessary.	Not adverse.	No impact.
Impact 3.16-2: Potential to Displace Homes or Businesses without Adequate Replacement Resources The proposed project would not displace any homes or businesses in the project area.	No mitigation necessary.	Not adverse.	No impact.
Impact 3.16-3: Potential to Indirectly Economically Impact the Businesses in the Project Area Businesses in the project area and its vicinity would benefit indirectly from both construction workforce spending (e.g., meals and incidentals) and project operations.	No mitigation necessary.	Not adverse.	Not applicable.

Table ES-2
Summary of Impacts and Mitigation Measures for the Action Alternative (Continued)

Impact	Mitigation Measure	NEPA Determination	CEQA Determination
Impact 3.16-4: Potential to Impact Businesses in the Project Area and the Region During Construction Project implementation would bring some economic benefits to the region and local businesses as a result of expenditures for construction materials purchasing and construction payroll.	No mitigation necessary.	Not adverse.	Not applicable.
Impact 3.16-5: Potential Impacts on Employment, Population, Housing, and Income During Construction The construction workforce required for demolition and construction activities would vary monthly, with a maximum workforce of approximately 25 people. This workforce demand would have a beneficial impact on employment and income. The project would not be expected to affect population or housing in the region given the available resident workforce.	No mitigation necessary.	Not adverse.	No impact.
Impact 3.16-6: Potential to Disrupt or Divide the Physical Arrangement of an Established Community Temporarily During Construction Project construction would result in some noise, vibration, air quality emissions, and construction-related traffic that could affect peoples' ability to enjoy the outdoor amenities in the Ferry Terminal vicinity during construction.	No mitigation necessary.	Not adverse.	Less than significant.
Impact 3.16-7. Potential to Result in Cumulative Impacts on Socioeconomics The project, in combination with other past, present, and reasonably foreseeable future projects, would not result in adverse cumulative socioeconomic impacts.	No mitigation necessary.	Project would not contribute to cumulative adverse impacts.	Less than significant.
Environmental Justice			
Impact 3.17-1: Potential to Result in Disproportionately High or Adverse Direct Impacts on Minority or Low-Income Populations Project operation would not result in direct high and disproportionate adverse impacts to any minority or low-income populations.	No mitigation necessary.	Not adverse.	Not applicable.

Table ES-2
Summary of Impacts and Mitigation Measures for the Action Alternative (Continued)

Impact	Mitigation Measure	NEPA Determination	CEQA Determination
Impact 3.17-2: Potential to Result in Disproportionately High or Adverse Indirect Impacts on Minority or Low-Income Populations Three potentially significant indirect impacts identified Section 3.2, Transportation and Circulation, are related to the addition of riders to the Muni F Market and Wharves line in the PM peak hour and to crosswalk pedestrian congestion at three crosswalks along The Embarcadero. These impacts would affect passengers of the F Market and Wharves as well as pedestrians along The Embarcadero, both of which are broadly used by Bay Area residents and visitors, and would not disproportionately impact minority or low-income populations in the project area.	No mitigation necessary.	Not adverse.	Not applicable.
Impact 3.17-3: Potential to Result in Disproportionately High or Adverse Impacts on Minority or Low-Income Populations During Construction Because there are no minority or low-income populations residing in the area where project construction impacts would be experienced, these impacts would not be borne disproportionately by minority or low-income populations.	No mitigation necessary.	Not adverse.	Not applicable.
Regional Growth			
Impact 3.18-1: Potential to Induce Population Growth The project would not result in increased population or regional growth, or the removal of any existing constraints to growth.	No mitigation necessary.	Not adverse.	Less than significant.
Impact 3.18-2: Potential for Construction to Induce Population Growth Project construction would not induce substantial population growth, because construction jobs would be filled by the existing, relatively large, and diversified labor force available in the San Francisco Bay Area	No mitigation necessary.	Not adverse.	Less than significant.
Impact 3.18-3: Potential to Result in Cumulative Impacts on Regional Growth The project, in combination with other past, present, and reasonably foreseeable future projects, would not result in cumulative regional growth impacts.	No mitigation necessary.	Project would not contribute to cumulative adverse impacts.	No impact.

Alternative would result from the facilities at the Ferry Terminal not being upgraded to Essential Facility Standards, inhibiting the improvement of WETA emergency operations and seismic safety (refer to Impacts 3.12-4 and 3.13-1) and from pedestrian congestion in the project area that would continue without the project circulation improvements (refer to Impacts 3.3-1 and 3.4-2).

EVALUATION OF ALTERNATIVES

Under the No Action Alternative, there would be no implementation of facility improvements at the Ferry Terminal. Therefore, only a small increase in water transit service (i.e., only service that could be accommodated at the existing two gates that WETA has access to) could be safely accommodated at the Ferry Terminal over the long term. In addition, in the event of an emergency, WETA vessels deployed for emergency operations would be required to use the existing two gates at the Ferry Terminal available to WETA (Gates B and E). Existing Ferry Terminal and Ferry Building areas would be used for staging of evacuees (e.g., areas along The Embarcadero or the Ferry Plaza), which are not built to Essential Facilities standards. If areas of the Ferry Terminal not built to Essential Facilities standards fail, or otherwise cannot be safely accessed, passengers would need to be staged elsewhere, and alternative access to vessels would need to be provided, potentially hindering evacuation activities.

The Action Alternative would accommodate the full expansion of water transit service outlined in WETA's IOP for the San Francisco Bay Area, by constructing three new gates, overwater berthing facilities, and supportive landslide improvements (such as additional passenger waiting and queuing areas, and circulation improvements). In addition, improvements constructed under the Action Alternative would all be constructed to Essential Facilities standards, to ensure that the improved circulation areas (e.g., the new Embarcadero Plaza) would be available for emergency operations and evacuee queuing, if necessary.

Although the No Action Alternative would not result in any physical impacts to the environment, it would not meet the purpose and need of the project; and over the long term, it would not improve alternative transportation and emergency operations in the Bay Area. The No Action Alternative would not accommodate the projected increases in transbay water transit trips that would help alleviate congestion over the Bay Bridge and through the Bay Area Rapid Transit Transbay Tube. Furthermore, the No Action Alternative would not address WETA and the Port's emergency operation needs. In addition, the No Action Alternative would be inconsistent with several of the plans and policies adopted for the Ferry Terminal area that encourage an expansion in water transit services, and improvements to public access and open space. Therefore, the No Action Alternative would not be considered an environmentally preferred/superior alternative over the long term.

The Action Alternative would meet the purpose and need of the project. The only adverse and significant and unavoidable impacts that would result from implementation of the Action Alternative, in the short or long term, would be transportation and circulation impacts. All other impacts identified for the Action Alternative would be negligible, less than significant and not adverse, or less than significant and not adverse with the implementation of mitigation measures. As described in Section 2.7 of this document, other alternatives to the project have been previously evaluated. However, these alternatives were found not to meet the project purpose and need, to not be feasible, to not be consistent with other plans, or to exceed projected funding. A majority of the adverse impacts that would result from the Action Alternative would be temporary impacts from construction, which would be outweighed by the long-term benefits of project implementation.

Therefore, the Action Alternative, as designed and with incorporation of the recommended mitigations, is considered to be the environmentally preferable/superior alternative.

COORDINATION AND CONSULTATION

Since late 2010, several types of public and agency participation have occurred as a part of the project design and the environmental review process pursuant to the requirements of NEPA, CEQA, and 23 USC 139. 23 USC 139 mandates—among other requirements—that the federal lead agency must establish a plan for coordinating public and agency participation in and comment on the environmental review process for a project or category of projects. Stakeholders and public agencies, including those with permitting authority for the project, have been engaged throughout the planning process, as detailed in Chapter 6, Public and Agency Involvement.

Federal, state, and local agencies that have jurisdiction over resources that could be affected by the project, or that have technical expertise on an issue relevant to the proposed project, were formally invited to participate in the environmental review process as either cooperating or participating agencies in the NEPA process. Table ES-3 summarizes those agencies that accepted invitations to participate in the NEPA process for the project. The National Marine Fisheries Service accepted FTA's request to serve as a cooperating agency pursuant to NEPA, and requested participation in the development of the EIS/EIR as it relates to the assessment of potential impacts and conservation measures for Endangered Species Act-listed fish species under the jurisdiction of National Marine Fisheries Service and essential fish habitat under the Magnuson-Stevens Fishery Conservation and Management Act.

Additionally, the Port accepted WETA's request to serve as a responsible agency under CEQA.

Table ES-3
List of Cooperating and Participating Agencies in the NEPA Process

Agency	Type of Agency	Type of Participation	Jurisdiction/Interest
National Oceanographic and Atmospheric Administration – National Marine Fisheries Service	Federal	Cooperating	Biological and marine resources
U.S. Army Corps of Engineers	Federal	Participating	Wetlands and waters of the U.S.
U.S. Coast Guard, San Francisco Sector	Federal	Participating	Marine navigation and safety
U.S. Environmental Protection Agency	Federal	Participating	Ecosystems, air quality and global climate change.
U.S. Fish and Wildlife Service	Federal	Participating	Biological resources
California State Lands Commission	State	Participating	Submerged lands
San Francisco Bay Conservation and Development Commission	Regional	Participating	Bay shoreline land uses and public access
Bay Area Air Quality Management District	Regional	Participating	Air quality
Port of San Francisco	Local	Participating	Land owner
San Francisco Bay Area Rapid Transit District	Local	Participating	Transportation, access

1.0 PURPOSE AND NEED

1.1 INTRODUCTION

The San Francisco Bay Area Water Emergency Transportation Authority (WETA) is proposing to expand berthing capacity at the Downtown San Francisco Ferry Terminal (Ferry Terminal), located at the San Francisco Ferry Building (Ferry Building), to support existing and future planned water transit services operated by WETA and WETA's emergency operations, as detailed in WETA's Implementation and Operations Plan (IOP) (WETA, 2003b). The Downtown San Francisco Ferry Terminal Expansion Project (or project) would include phased construction of three new gates and overwater berthing facilities, in addition to supportive landside improvements, such as additional passenger waiting and queuing areas, circulation improvements, and other water transit-related amenities. The new gates and other improvements would be designed to accommodate future planned water transit services between Downtown San Francisco and Antioch, Berkeley, Martinez, Hercules, Redwood City, Richmond, and Treasure Island, as well as emergency operation needs.

WETA and the Federal Transit Administration (FTA) have prepared this Environmental Impact Statement/ Environmental Impact Report (EIS/EIR) to address the environmental effects of the proposed Ferry Terminal improvements. These agencies have prepared this EIS/EIR in accordance with the National Environmental Policy Act (NEPA) of 1969, 42 United States Code Section 4321 et seq.; the Council on Environmental Quality regulations for implementing NEPA, 40 Code of Federal Regulations, Parts 1500-1508; the California Environmental Quality Act (CEQA) of 1970, California Public Resources Code, Section 21000 et seq., as amended; the Guidelines for Implementation of CEQA, Title 14, California Code of Regulations, Section 15000 et seq.; and FTA guidelines. The FTA is the NEPA lead agency, and WETA is the CEQA lead agency. The project includes two alternatives: the No Action Alternative and the Action Alternative under NEPA guidelines (No Project and Project under the CEQA guidelines), as described in detail in Chapter 2.0.

1.2 PROJECT LOCATION AND PROJECT AREA MAP

The Ferry Terminal is located in the northeastern section of San Francisco, California situated at the foot of Market Street at The Embarcadero (see Figure 1-1 for project location and project area). The project area, surrounding the Ferry Building, encompasses property managed in the public trust by the Port of San Francisco (Port) from the south side of Pier 1 to the north side of Pier 14 from the Embarcadero Promenade to San Francisco Bay.

The project area serves as an important public space in San Francisco. It contains a mix of commercial, office, and retail uses, including the Ferry Building marketplace, and is also an active hub for water transit. Three water transit services operate from four gates in the project area: Gates B, C, D, and E. Bounded by San Francisco Bay to the east and downtown to the west, the project area is surrounded by a mix of open spaces and passive recreation areas such as waterfront walkways, plazas, and public piers. Although the waterfront has changed substantially over time, the project area and its vicinity are modern and active, as well as reflective of their history. The project area is located within the boundaries of two historic districts (the Central Embarcadero Piers Historic District and Embarcadero Historic District), and individually significant historic structures are located within or adjacent to the project area—the Ferry Building, the Agriculture Building, and Pier 1.

1.3 PURPOSE OF THE PROPOSED PROJECT

The purpose of the project is to support existing and future planned water transit services operated by WETA on San Francisco Bay, as established by WETA (formerly known as the Water Transit Authority [WTA]) in its IOP (WETA, 2003b), and in accordance with City and County of San Francisco and regional policies to encourage transit use. Furthermore, the project would address deficiencies in the transportation network that impede water transit operations, passenger access, and passenger circulation at the Ferry Terminal, as described in this chapter. The project objectives include:

- Accommodate WETA's projected increase in water transit ridership and related vessel arrivals and departures from the Ferry Terminal;
  - Provide a viable alternative mode of transportation that accommodates projected increases in transbay trips, and helps alleviate congestion over the San Francisco Bay Bridge and through the San Francisco Bay Area Rapid Transit (BART) Transbay Tube;
- Address WETA and the Port's emergency operation needs;
  - Establish a circulation plan and improved signage that provides clear pedestrian routes for vessel to bus and vessel to rail transfers, as well as safe routes for bikes, emergency vehicles, and delivery trucks to enter, park and exit the area;
  - Provide necessary landside improvements, such as designated weather-protected areas for waiting and queuing, ticket machines and fare collection equipment, improved lighting, and improved boarding and arrival/departure information to serve water transit passengers and to enhance the Ferry Terminal as the central hub for water transit services on San Francisco Bay; and
- Enhance the area's public access and open space with design features that create attractive, safe daytime and nighttime public spaces for both water transit passengers and other users of the Ferry Building area.

1.4 PROJECT BACKGROUND

1.4.1 San Francisco Bay Area Water Emergency Transportation Authority

WETA (formerly WTA) is a local agency with multi-county jurisdiction which was created through Senate Bill 428, enacted in October 1999, to plan and operate new and expanded water transit service and related ground transportation for the San Francisco Bay Area. In October 2007, Senate Bill 976 replaced WTA with WETA and expanded WETA's duties to include the coordination of emergency activities of all water transportation and related facilities within the San Francisco Bay Area region, except those provided or owned by the Golden Gate Bridge, Highway, and Transportation District (SB 976, 2007).

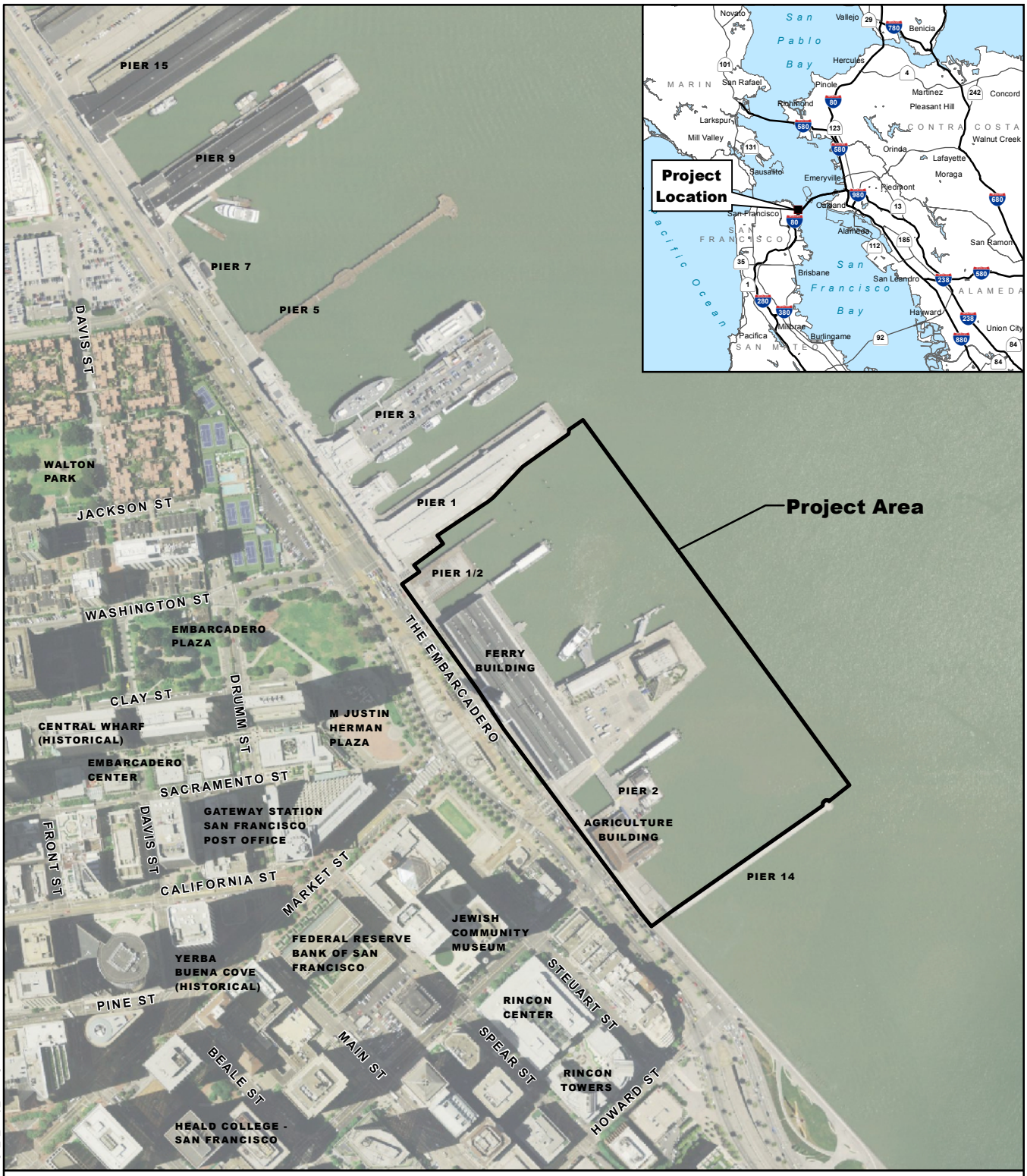
WETA's mission is to design, build, and operate a seamless transit system that responds to the region's congestion management needs, develops innovative environmental solutions for vessels, contributes to economic vitality and improves quality of life.

1.4.2 WETA Planning Efforts

WETA's IOP presents a strategy to improve San Francisco Bay Area transit service with an environmentally friendly water transit system (WETA, 2003b). WETA prepared a Program EIR that addressed the potential environmental impacts and associated mitigation measures resulting from the expansion of the network of water transit service defined in the IOP (WETA, 2003a). The Program EIR analyzed the cumulative impacts, at a program level, of the development of additional routes, and assumed that project-level environmental review would be undertaken for the development of new or expansion of existing Ferry Terminal facilities to adequately address site-specific issues.

In line with the IOP, WETA is currently undertaking a comprehensive expansion of water transit service in the San Francisco Bay Area, including:

- Improving service on existing water transit routes and adding up to seven future planned routes (Downtown San Francisco to Antioch, Berkeley, Martinez, Hercules, Redwood City, Richmond, and Treasure Island);



Note: The America's Cup project has removed all of Pier 1/2 and will remove the building located on Pier 2 prior to project construction.

Source: Imagery, Digital Globe, 2009.

DOWNTOWN SAN FRANCISCO FERRY TERMINAL EXPANSION PROJECT AREA

Downtown San Francisco
Ferry Terminal Expansion Project
28067812 San Francisco, California

FIGURE 1-1

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- Delivering new vessels that are ten times cleaner than existing vessels and 85 percent better than the U.S. Environmental Protection Agency's emissions standards for 2007 marine engines;

- Providing better, more convenient landside connections to water transit services that will enhance ridership; and

- Expanding facilities at the Ferry Terminal to support WETA's planned expansion of water transit service on San Francisco Bay.

The planned expansion focuses on delivering new routes and facilities with identifiable funding sources, such as new bridge toll revenues from Regional Measure 2 (RM-2), local sales tax measures (San Francisco, Contra Costa and San Mateo counties), federal grants, and fare box revenues. WETA is expecting to receive RM-2 funds for the proposed improvements at the Ferry Terminal. RM-2 funds are generated from an initiative approved by voters on March 2, 2004. This initiative earmarks a $1.00 increase in tolls on the region's seven state-owned toll bridges to address congestion in the transbay bridge corridors. In addition to RM-2 funding, WETA is requesting assistance to fund the project from the FTA and from the state of California through Proposition 1B, the Highway Safety, Traffic Reduction, Air Quality, and Port Security Bond Act of 2006, approved by California voters on November 7, 2006, authorizing over $19.9 billion in bonds to be issued and sold for highway and transit improvements that provide mobility improvements in highly traveled or highly congested corridors in all regions of California.

In 2009, WETA adopted the Emergency Water Transportation System Management Plan, which established how WETA will use regionalized public and private assets to coordinate emergency water transportation services on San Francisco Bay when the need arises, and manage the restoration of normal water transit services. The Plan reflects best emergency management practices drawn from national, state, and local frameworks and is intended to provide WETA with guidance on the concept of emergency operations, incident management, pre-emergency planning, response phase, recovery phase, and non-emergency operations (WETA, 2009). The Emergency Water Transportation System Management Plan and Ferry Terminal emergency staging constraints identified in Section 1.4.4 were considered in developing the project alternatives.

1.4.3 Current Water Transit Service at the Ferry Terminal

Prior to construction of the San Francisco Bay Bridge and Golden Gate Bridge in the 1930s, the San Francisco Bay Area's population was about a quarter of what it is at present. During that time, water transit services on San Francisco Bay carried 15 times the number of passengers carried today, accounting for up to 50 million passenger trips per year. At the peak of this era, there were more than 320 ferry arrivals and departures at the Ferry Building per day (carrying more than 250,000 passengers), connecting with streetcar arrivals and departures at the Ferry Building approximately every 90 seconds. The opening of the San Francisco Bay Bridge and the Golden Gate Bridge in 1936 and 1937, respectively, along with mass use of the automobile, eventually rendered the daily commute to San Francisco by water transit obsolete (Ferry Building, 2010).

Water transit today is a small but growing part of the San Francisco Bay Area's transportation network. Although it carries only a fraction of the total San Francisco Bay Area travelers, approximately 3 to 4 million passenger trips per year, water transit plays a meaningful role in reducing congestion and providing mobility in the key transbay bridge corridors throughout the San Francisco Bay Area. Six water transit routes currently serve the Ferry Terminal, as shown in Table 1-1. Today, the Ferry Terminal accommodates approximately 130 weekday arrivals and departures serving more than 10,000 water transit passengers (MTC, 2007). In addition to supporting water transit services, the Ferry Terminal area also serves as an important public space in San Francisco.

Table 1-1
Current Water Transit Routes at the Ferry Terminal

Operator	Route	Hours of Service[1]	Peak Period Frequency[2]	Current Daily Ridership	AM Peak Period Ridership	AM Peak Period Arrivals[2]
WETA	Alameda/ Oakland-San Francisco	6:30 AM-8:25 PM	65 minutes	1,500 (City of Alameda, 2007)	250	3
WETA	Alameda Harbor Bay-San Francisco	6:55 AM-7:35 PM	60 minutes	660 (Gougherty, 2011)	295	3
WETA	Vallejo-San Francisco	6:35 AM-7:05 PM	25-60 minutes	2,330 (MTC, 2010a)	560	4
Golden Gate Ferry	Larkspur-San Francisco	6:20 AM-9:35 PM	30-45 minutes	4,615 (GGT, 2010)	1,235	5
Golden Gate Ferry	Sausalito-San Francisco	7:35 AM-7:55 PM	70 minutes	1,442 (GGT, 2010)	200	2
Blue & Gold Fleet	Tiburon-San Francisco	6:20 AM-7:15 PM	50-60 minutes	629 (MTC, 2007)	280	4
Total (all services)				**11,176**	**2,820**	**21**
Total (WETA berths[3])				**5,119**	**1,385**	**14**

Notes:
[1] Hours of service denotes first arrival to and last departure from the Ferry Terminal.
[2] AM peak period reflects Weekday AM peak from approximately 6:30 AM-9 AM.
[3] Totals for WETA berths include those services that operate from Gate B and Gate E. This includes the services operated by WETA as well the Blue & Gold Fleet Service to Tiburon.
WETA = Water Emergency Transportation Authority

1.4.4 Project Area History

In 1968, the responsibilities for the San Francisco waterfront, including the project area, were transferred from the state to the City and County of San Francisco through the Burton Act. As a condition of the transfer, the state required the City of San Francisco to create a Port Commission that would have the authority to manage the San Francisco waterfront in the public trust for the citizens of California. The Port is currently responsible for managing the 7.5 miles of San Francisco Bay shoreline, extending from Hyde Street Pier in the north to India Basin in the south. The Port's responsibilities include promoting maritime commerce, navigation, and fisheries; restoring the environment; and providing public recreation. Although the Port is a part of the City and County of San Francisco, it receives all of its funding through the management of the lands under its jurisdiction (e.g., through lease payments).

The Port is responsible for any and all land-use improvements in the project area, including those improvements proposed as a part of the project. The Port has adopted several plans and policies to guide development along the waterfront, such the Waterfront Land Use Plan and the Waterfront Land Use Plan Design and Access Element. Compliance with these plans and policies is a part of the Port's lease approval and design review processes..

In the 1990s, the Port initiated a comprehensive land use planning process that identified near-term and long-term improvements that should be made to the Ferry Terminal. The planning process, summarized in the project's Concept Design – Stage 1 Final Report (Port, 1994), addressed deficiencies in the circulation of pedestrians across The Embarcadero and through the Ferry Building, constraints imposed by previous design modifications of the Ferry Building that obscured wayfinding to the gates, limited opportunities for public gathering and access to San Francisco Bay, and restricted commercial development within the building. In response to these deficiencies, the Port embarked on a series of near-term improvements that had available funding. These improvements were implemented through Phase 1 of the project. During these planning efforts, a variety of design, configuration, and circulation improvements were considered. They are described in more detail in Chapter 2.0 of this EIS/EIR.

The Port conducted an environmental analysis of the Phase 1 improvements in the San Francisco Downtown Ferry Terminal Environmental Assessment (NEPA) and Negative Declaration/Initial Study (CEQA) (SF Planning et al., 1997), and obtained a permit from the San Francisco Bay Conservation and Development Commission to implement these improvements in 1998 (BCDC, 1998). Construction of Phase 1 was completed by the Port in 2003, including the construction of new piers to accommodate Alameda Harbor Bay, Alameda/Oakland, Tiburon, and Vallejo operations in 2003 (Gates B and E). Not all of the Phase 1 improvements identified and analyzed in the environmental document were constructed at that time due to funding availability. In addition, the planning process that resulted in the Phase 1 improvements identified long-term future improvements that could be made (Phase 2).

As part of separate initiatives during the same time period, the Port undertook and completed improvements to the street design and pedestrian crossing of The Embarcadero in front of the Ferry Building (Harry Bridges Plaza) as part of the Mid-Embarcadero Transportation and Open Space Project and undertook the historic restoration and adaptive reuse of the Ferry Building. Restoration involved a public-private collaboration that redeveloped the historic landmark building into a mixed-use property with a public food market on the ground floor and premier quality office space on the upper floors while continuing it historic role as a transportation hub (Ferry Building, 2010).

1.4.5 Ferry Building Area Planning and Development Program

Building on the improvements already completed in and around the Ferry Building, the Port is considering additional improvements to the Ferry Building area as part of a larger planning and development program for the entire area. This program includes elements of the WETA project (as described in Chapter 2.0 of this EIS/EIR), as well as other improvements unrelated to the expansion of water transit service, such as future rehabilitation and reuse of the Agriculture Building, public access and open space enhancements, development of a comprehensive circulation plan, and coordination with BART to implement safety improvements needed in project vicinity.

While the WETA project described in this EIS/EIR would contribute to the Port's larger planning and development program for the Ferry Building area, WETA and the Port have separate overall responsibilities and goals relating to improvements in the area. WETA and the Port entered into a Memorandum of Understanding that establishes each agency's roles and responsibilities for improvements in the Ferry Building area and establishes a coordinated planning process for implementing design and environmental review for projects in the Ferry Building area. The Memorandum of Understanding defines which elements of the Ferry Building area improvements would be the responsibility of each agency. WETA would be responsible for the waterside and landside improvements related to the expansion of water transit service as described in this EIS/EIR. The Port would be responsible for other elements not related to the expansion of water transit service, such as rehabilitation and reuse of the Agriculture Building, which would undergo separate environmental review processes when the Port proposes to implement those projects (WETA, 2010).

1.5 NEED FOR THE PROPOSED PROJECT

1.5.1 Regional Growth and Transbay Capacity Constraints

Between now and 2035, the Bay Area is expected to gain 2 million residents and 1.7 million jobs (MTC, 2009). Downtown San Francisco will remain one of the primary employment centers of the region. The Metropolitan Transportation Commission estimates that the Bay Bridge corridor will have substantial growth in the number of daily person trips, increasing from 590,000 current trips to 772,000 in 2025, and in vehicular traffic increasing from 300,000 current vehicles per day to 425,000 vehicles per day in 2025 (MTC, 2002). The Metropolitan Transportation Commission estimates transbay transit ridership will also follow this growth trend.

Transit currently carries approximately 160,700 BART passengers, 15,200 Alameda Contra Costa Transit (AC Transit) bus passengers, and 4,900 water transit passengers between the East Bay and San Francisco (MTC, 2000). By 2025, BART is expected to carry 254,000 daily riders through the Transbay Tube. AC Transit is expected to carry 19,800 passengers to and from San Francisco, and water transit services are expected to carry 7,060 passengers. In total, 36 percent of Bay Bridge corridor trips are expected to be on transit (MTC, 2002).

The projected increased in transbay trips will result in deficiencies in the transportation network as described below.

Congestion in the I-80/Bay Bridge Corridor

This increase in transbay trips will aggravate travel delay along Interstate 80 (I-80). The California Department of Transportation's 2002 Bay Area Freeway Congestion Data indicates that the Eastshore Freeway currently has a daily delay of 24,550 vehicle hours and 49.0 directional miles of congestion, which ranks number one for vehicle delay in the regional roadway network. By 2025, the Bay Bridge is expected to have 73,400 peak-period vehicle hours of delay, extending morning congestion at the Bay Bridge Toll Plaza from 4 hours to nearly 5 hours (MTC, 2002). The delays on the Bay Bridge and I-80 affect goods movement, particularly goods traveling to and from the Port of Oakland, as well as auto travel.

Bay Bridge Congestion and Bus Service

AC Transit and carpools are the major alternative means of travel across the Bay Bridge into San Francisco, and are subject to the traffic delays discussed in the previous paragraph. Installation of high-occupancy vehicle or bus lanes on the Bay Bridge is not currently planned; therefore, increased bus and carpool delays can be expected through 2025.

BART Transbay Tube Capacity Constraints

BART is expected to accommodate future growth, expected to reach more than 556,000 weekday riders system wide by 2025 (254,000 of whom would ride through the Transbay Tube), by installing train control improvements to permit operation at closer headways, and by making other capital investments. Still, the throughput capacity of the Market Street subway may become constrained due to increased demand for peak period transbay service over the planning horizon. At that point, substantial capital investments will have to be made to increase capacity in the Transbay Tube (BART, 2010).

Inadequate Transit Service to Meet Treasure Island Demand

Future transbay capacity for transit and automobiles will also be affected by the proposed redevelopment of Treasure Island, which will add an estimated 4,600 daily AM peak hour and 6,800 PM peak hour Treasure Island commuters traveling between Treasure Island and both the East Bay and San Francisco. Of these weekday peak period trips, 13 percent are expected to be water transit based, 12 percent will be bus based,

and the remaining 75 percent are expected to be auto and van based (Fehr & Peers, 2010). The Treasure Island peak travel demands coincide with the highest volume of traffic on the Bay Bridge. Based on measures and strategies to handle the travel demand, a significant number of commuters will be reliant on transit. In terms of transit options, the San Francisco Municipal Railway currently operates three buses to Treasure Island on Route 108. With the proposed Treasure Island development, expanded San Francisco Municipal Railway bus service to San Francisco is proposed between the San Francisco Transbay Terminal and the Treasure Island Transit Hub adjacent to the Treasure Island Ferry Terminal (TICD, 2006). In this scenario, water transit would supplement bus service and would provide scheduled and emergency service unimpeded by traffic congestion or disruption on roads and highways or in tunnels.

1.5.2 Water Transit Operations, Circulation and Access Constraints at the San Francisco Ferry Terminal

In 2035, the Ferry Terminal is projected to serve approximately 32,000 water transit passengers, a 300 percent increase over current ridership levels of approximately 11,200 passengers, accounting for existing services between San Francisco and Alameda, Oakland, and Vallejo, as well as future planned water transit services between San Francisco and Antioch, Berkeley, Martinez, Hercules, Redwood City, Richmond, and Treasure Island (CSI, 2011; CSI, 2012) (see Table 1-2).[1] The projected ridership increases cannot be adequately accommodated at the Ferry Terminal because of the following current infrastructure, circulation, and operating deficiencies.

Insufficient Number of Gates and Berthing Facilities to Accommodate New Water Transit Service

Currently the Ferry Terminal has four gates (B, C, D, and E), two of which are used exclusively by Golden Gate Ferry (C and D). The remaining gates (B and E) to which WETA has access accommodate 14 vessel arrivals per AM peak period (see Table 1-1). The number of AM peak period arrivals for WETA services[2] is expected to increase to 52 to 57 vessels by 2035 (see Table 1-2). Together, both gates can safely accommodate only about eight vessel arrivals per hour. Therefore, it would not be feasible to operate all new services from only the existing gates, because the additional vessel traffic would constrain the movement of vessels operating into and out of the terminal, increase the risk of accident, and result in arrival and departure scheduling conflicts (see Figure 1-2).

Inadequate Waiting and Circulation Area for Passengers

Due to expanded water transit service and increased ridership, through-flow and queuing of passengers accessing the Ferry Terminal is expected to increase by 2035 (see Table 1-2). Passenger waiting and queuing areas (the existing areas along the Ferry Building promenade and Gates B and E) are not designed to effectively or safely accommodate this volume of passengers. As shown on Figure 1-3, certain portions of the existing vessels boarding areas are structurally deficient, and are not expected to survive a major earthquake (ROMA, 2012). There is a need to upgrade the deck and pile structures in the Ferry Terminal area to enhance safety, and to ensure that passenger waiting and circulation areas would not be further restricted, potentially even preventing access to the vessel boarding areas if these structures should fail. In addition, weather protection and distinct queuing areas for passengers, an objective of the Phase 1 of the Ferry Terminal planning effort, are not currently provided (see Figure 1-4).

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[1] WETA's ridership model was developed in 2002, and is linked to the regional travel forecasting model maintained by the Metropolitan Transportation Commission, and to socioeconomic data forecasts published by the Association of Bay Area Governments. The WETA model was updated in 2011 to include the most recent data available from the Metropolitan Transportation Commission and the Association of Bay Area Governments for year 2035. The WETA model is documented in the Draft Final Working Paper Ridership Model Calibration and Validation for the Water Transit Authority, and Draft Final WETA Model Update and Validation Report, both of which are available from WETA (CSI, 2011; CSI, 2012).

[2] For the purposes of this Environmental Impact Statement/Environmental Impact Report, the Blue & Gold Fleet service to Tiburon is included in the totals presented for "Water Emergency Transportation Authority services," because the Blue & Gold Fleet service to Tiburon shares Gate B with the Water Emergency Transportation Authority.

Table 1-2
Estimated 2035 Water Transit Ridership

Operator	Route	Maximum Peak Period[1] Headway	Daily Ridership	AM Peak Period[1] Ridership	PM Peak Period Ridership[2]	Peak Arrivals[3]
WETA	Alameda Harbor Bay-San Francisco	30 min	1,815	699	699	5
WETA	Alameda/Oakland-San Francisco					
	Alameda-SF Service	15 min	1,741	429	533	10
	Oakland-SF Service	15 min	3,145	928	1,153	
WETA	Vallejo-San Francisco	30 min	2,289	945	920	5
Golden Gate Transit	Larkspur-San Francisco	20 min	4,634	1,642	1,642	5-6
Golden Gate Transit	Sausalito-San Francisco	30 min	1,799	591	591	3-5
Blue & Gold Fleet	Tiburon-San Francisco	30 min	836	299	299	4-5
WETA	Berkeley-San Francisco	30 min	1,589	635	635	5
WETA	Hercules-San Francisco	60 min	565	203	203	2-3
WETA	Treasure Island-San Francisco	15 min	10,746	2,395	3,087	10
WETA	Richmond-San Francisco	30 min	1.715	647	647	5
WETA	Martinez-San Francisco	60 min	614	244	244	2-3
WETA	Antioch-San Francisco	60 min	445	193	193	2-3
WETA	Redwood City-San Francisco	60 min	214	93	93	2-3
Total (all services)			**32,147**	**9,943**	**10,939**	**60-68**
Total (WETA services[4])			**25,714**	**7,710**	**8,706**	**52-57**

Source: CSI, 2011; Fehr & Peers, 2010; Fehr & Peers, 2011

Notes:

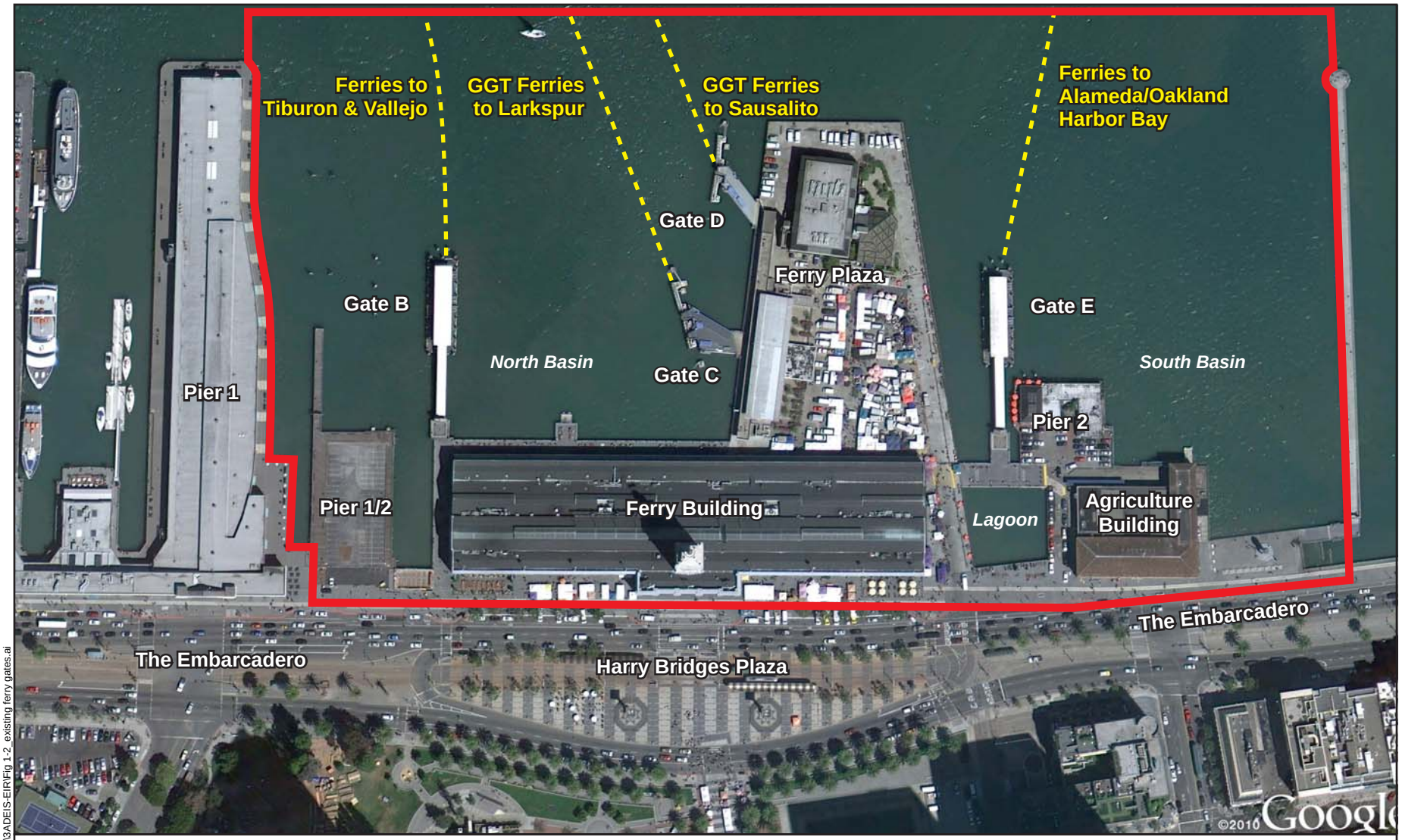
[1] The AM peak period is from 6:30 AM to 9:00 AM. Ridership reflects passengers arriving as well as departing. During the AM peak period, 96 percent of passengers would be arriving at the Ferry Terminal

[2] The PM peak period is from 4:00 PM to 6:30 PM. The PM peak period ridership estimates are based on actual data for existing routes and are assumed to be the same as the AM peak period for new services.

[3] Represents the number of arrivals during each peak period: both the AM and the PM.

[4] For the purposes of this Environmental Impact Statement/Environmental Impact Report, the Blue & Gold Fleet service to Tiburon is included in the totals presented for "WETA services," because the Blue & Gold Fleet service to Tiburon shares Gate B with WETA.

WETA = Water Emergency Transportation Authority



Project Area

Note: The America's Cup project has removed all of Pier 1/2 and will remove the building located on Pier 2 prior to project construction.

N

0 100 200 FEET

EXISTING FERRY GATES AT SAN FRANCISCO FERRY BUILDING

Downtown San Francisco Ferry Terminal Expansion Project
San Francisco, California

28067812

FIGURE 1-2

1/21/13 vsa/hk...T:\WETA\Draft EIR-EIS\3ADEIS-EIR\Fig 1-2 existing ferry gates.ai

Source: Roma Design Group, et al, 2010, Google Earth Pro 2010.

Project Area

Structurally deficient pier areas

Note: The America's Cup project has removed all of Pier 1/2 and will remove the building located on Pier 2 prior to project construction.

0 100 200 FEET

DECKS AND PILES OF PIERS IN POOR CONDITION

Downtown San Francisco
Ferry Terminal Expansion Project
28067812 San Francisco, California

FIGURE 1-3

1/21/13 vsa/hk...T:\WETA\Draft EIR-EIS\3ADEIS-EIR\Fig 1-3_decks and piles.ai

Source: Roma Design Group, et al, 2010, Google Earth Pro 2010.

EXISTING FERRY PATRON QUEUING CONSTRAINTS

Downtown San Francisco
Ferry Terminal Expansion Project
28067812 San Francisco, California

FIGURE 1-4

Note: The America's Cup project has removed all of Pier 1/2 and will remove the building located on Pier 2 prior to project construction.

Source: Roma Design Group, et al, 2010.

1/21/13 vsa/hk...T:\WETA\Draft EIR-EIS\3ADEIS-EIR\Fig 1-4_exist queue cons.ai

Lack of Clearly Designated Pedestrian Connectivity Linkages

Clearly identifiable pedestrian circulation pathways and accompanying wayfinding signage between the North Basin and South Basin gates and to bus/rail transfer points west of the Ferry Building are lacking. Existing passenger circulation bottlenecks are created because of the poorly defined pedestrian pathways and the constrained space along some of those pathways (see Figure 1-5). In some areas of the Ferry Building, there are conflicts between pedestrian circulation and movement of service delivery vehicles attempting to access loading areas for the businesses located in the Ferry Building.

1.5.3 Air Quality Management Issues

According to the Bay Area Air Quality Management District, the region is currently in non-compliance for ozone and particulate matter 2.5 microns in diameter or less ($PM_{2.5}$) under federal air quality standards and in non-compliance for ozone, $PM_{2.5,}$ and particulate matter 10 microns in diameter or less (PM_{10}) under state standards (BAAQMD, 2010). Although the San Francisco Bay Area's air quality has improved in recent years, an increase in population and vehicle miles driven between now and 2035 is expected to increase particulate matter emissions by 20 percent for $PM_{2.5}$ and 29 percent for PM_{10} (MTC, 2009). The Bay Area Air Quality Management District regional performance objectives call for reductions in daily vehicle miles traveled by 10 percent, $PM_{2.5}$ emissions by 10 percent, PM_{10} emissions by 45 percent, and carbon dioxide emissions to 40 percent below 1990 levels (MTC, 2009).

Cross-bay water transit service can support San Francisco Bay Area air quality goals by encouraging a shift from vehicle to water transit usage. The WETA IOP Program EIR, which analyzed increased regional water transit service, found that an expanded water transit system would result in a net decrease in nitrous oxide (an ozone precursor), carbon monoxide, and PM_{10} (WETA, 2003a).

1.5.4 Disaster Response and Recovery

Water transit provides a viable alternative for transporting people around the region when unexpected and long-term disruption renders other components of the regional transportation system inoperable. Disastrous events that have disrupted the transportation system have occurred several times during the past 25 years. For instance, after the Loma Prieta earthquake damaged the San Francisco Bay Bridge, water transit service using excursion vessels was established to supplement BART service between the East Bay and San Francisco.

In the event of a disaster, WETA will provide emergency water transportation services during the response phase, and then restore basic water transit services during the recovery phase of a disaster as described in the WETA Transition Plan (WETA, 2009). During the response phase, WETA will work to effectively communicate, coordinate with other agencies, set and meet objectives and timeframes, and plan its activities by abiding by procedural best practices recognized by local, state, and federal emergency response organizations.

According to the San Francisco Bay Area Regional Emergency Coordination Plan, in the event of a major catastrophe, such as a 7.9 magnitude earthquake on the San Andreas Fault, it is estimated that approximately 296,200 people from San Francisco County will require mass transportation assistance within the first three days of the event (Cal EMA et al., 2010). In its Preliminary Design Concept Plan, WETA estimates that additional gates will be needed to accommodate the substantial number of evacuees in the event of a major catastrophe (ROMA, 2012). In addition to the Golden Gate Ferry gates, five WETA-operated gates could board 9,000 evacuees per hour. Currently, the two existing WETA gates have the capacity to board less than half that number of evacuees per hour.

The limited availability of berthing facilities will be further constrained by the lack of available staging areas to assemble, queue, and board crowds of evacuees. Evacuees would be directed into boarding queues, and as vessels are boarded and depart, subsequent evacuees from The Embarcadero, the adjacent promenades, or the Ferry Building and other nearby areas would queue to board vessels (ROMA, 2012). This movement of people attempting to access South Basin gates would be constrained by the open water (lagoon) south of the Ferry Building. Similarly, the limited circulation area north of the Ferry Building will impede staging and access to North Basin gates (see Figure 1-6). To accommodate the volume of people accessing gates during emergencies, the circulation area surrounding the Ferry Building will need to be expanded with new decking built over open water to Essential Facilities[3] standards.

For the recovery phase, WETA will work towards restoration of normal, pre-emergency water transit services within three days after the disaster. In the event that bridges, highways, and other transportation facilities become inoperable, WETA may provide additional or expanded service (WETA, 2009).

1.6 PURPOSE OF THE EIS/EIR DOCUMENT

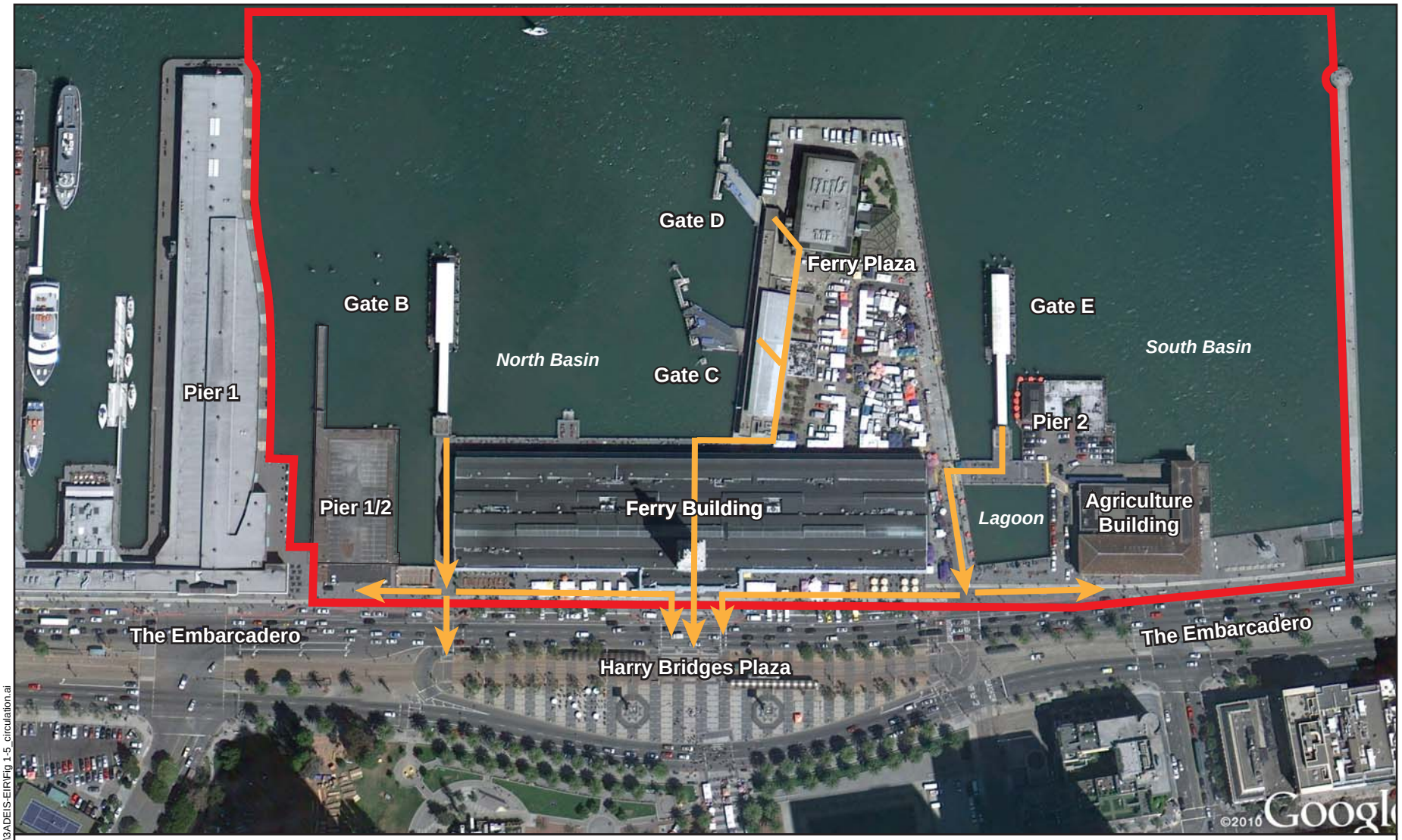
The purpose of the EIS (as required by NEPA) and EIR (as required by CEQA) is to describe, analyze, and compare the potential environmental impacts of the project alternatives and their implementation. FTA is the federal lead agency under NEPA, and WETA is the local lead agency under CEQA for the joint NEPA (EIS)/CEQA (EIR) document. The EIS/EIR analysis is considered as part of the decision-making process.

The EIS/EIR also provides information on the methodologies and assumptions used for the analyses. It proposes mitigation measures that can minimize the effect of adverse impacts, and may also include consideration of other decision factors such as costs, technical feasibility, agency statutory mission, project purpose and need, and study goals and objectives.

When the Draft EIS/EIR is published, agencies and the general public have the opportunity to review and comment on the Draft EIS/EIR during a formal comment period, which is required for a minimum of 45 days. Public hearings may be held during the comment period. The public comment period begins upon publication of a Notice of Availability for the Draft EIS/EIR.

During the review period, public comments will be recorded and FTA and WETA will prepare responses to the comments, which are then incorporated into the Final EIS/EIR. In addition to revisions in the text that correspond to the comments received, the Final EIS/EIR identifies the lead agency's preferred alternative and the reasons for selecting this alternative. The release of the Final EIS/EIR is announced by publishing a Notice of Availability in the Federal Register. A Record of Decision notifies the public of the alternative that the agency has selected to be carried forward for more detailed engineering and design and the rationale for that decision. WETA, the local lead agency under CEQA, can certify the EIR after the Final EIS/EIR is published.

[3] As defined by the California Building Code 2010 and International Building Code 2009, Essential Facilities are buildings and other structures that are intended to remain operational in the event of extreme environmental loading from flood, wind, snow, or earthquakes.



Project Area

Circulation Pathways

Note: The America's Cup project has removed all of Pier 1/2 and will remove the building located on Pier 2 prior to project construction.

0 100 200 FEET

EXISTING FERRY PATRON CIRCULATION PATTERNS

Downtown San Francisco
Ferry Terminal Expansion Project
28067812 San Francisco, California

FIGURE 1-5

Source: Roma Design Group, et al, 2010. Google Earth Pro 2010.

4/25/13 vsa/hk...T:\WETA\Draft EIR-EIS\3ADEIS-EIR\Fig 1-5_circulation.ai

Project Area

Constrained evacuation staging and circulation

Note: The America's Cup project has removed all of Pier 1/2 and will remove the building located on Pier 2 prior to project construction.

0 100 200 FEET

CONSTRAINED EVACUATION STAGING AND CIRCULATION AREAS

Downtown San Francisco
Ferry Terminal Expansion Project
28067812 San Francisco, California

FIGURE 1-6

1/21/13 vsa/hk...T:\WETA\Draft EIR-EIS\3ADEIS-EIR\Fig 1-6_const evac.ai

Source: Roma Design Group, et al, 2010. Google Earth Pro 2010.

2.0 ALTERNATIVES

The Downtown San Francisco Ferry Terminal Expansion Project (project) includes two alternatives: the No Action Alternative, and the Action Alternative under National Environmental Policy Act (NEPA) guidelines (No Project and Project under the California Environmental Quality Act [CEQA] guidelines). These alternatives are described in detail below.

Consistent with the San Francisco Bay Area Water Emergency Transportation Authority (WETA) Implementation and Operations Plan (IOP) and the Program Environmental Impact Report (EIR) prepared for the IOP (available at http://watertransit.org/newsInformation/eir.aspx), passenger use of the Downtown San Francisco Ferry Terminal (Ferry Terminal) would increase based on the future expansion of existing services and the implementation of new water transit services (WETA, 2003a; WETA, 2003b). Total ridership at the Ferry Terminal is projected to increase from approximately 11,200 to 32,150 average weekday passengers, and from 21 to approximately 60 to 68 AM peak-period vessel arrivals by 2035. Of this total, new and existing services provided by WETA are projected to account for 25,700 average weekday passengers and 52 to 57 AM peak-period vessel arrivals at the Ferry Terminal by 2035. As described in Chapter 1.0, the existing facilities at the Ferry Terminal are inadequate to accommodate this projected increase in water transit service.

This Environmental Impact Statement (EIS)/EIR addresses facility improvements to the Ferry Terminal that would accommodate the additional WETA ridership and vessel arrivals anticipated to occur at the Ferry Terminal by 2035. This document does not address the need for expanded routes and services, which was planned and analyzed in the IOP and Program EIR for the IOP. In addition, separate environmental analysis pursuant to NEPA and CEQA will be prepared for each new route, which will analyze potential impacts at the route origin. Therefore, as described in this EIS/EIR, the No Action Alternative describes the WETA service that could be accommodated at the existing gates available to WETA at the Ferry Terminal (Gates B and E), without any changes or improvements. The Action Alternative describes the project alternative proposed by WETA and the Federal Transit Administration (FTA) for expanding the Ferry Terminal facilities to accommodate all new and existing WETA services projected by 2035.

2.1 LOCAL PLANNING PROCESS

In 2003, WETA adopted its IOP, which envisioned the future of water transit in the Bay Area. The IOP identified new water transit routes that would be developed, and existing services that would be expanded over a 25-year planning horizon. The Program EIR for the IOP analyzed the potential environmental consequences of adding new routes and expanding existing services. Since that time, WETA has progressed with implementing the vision of the IOP and developing new water transit routes. To date, WETA has completed construction of one new terminal, and is currently developing projects for six new terminals and water transit routes. Most of the new routes will provide service from East and South Bay locations to the Ferry Terminal.

One of the new water transit routes would serve the new development proposed at Treasure Island. This development project, the Treasure Island and Yerba Buena Island Redevelopment Plan, which includes the new water transit service, has undergone a separate environmental review and public involvement process coordinated by the proposed developer and the City and County of San Francisco (CCSF). The Draft and Final EIR for the Redevelopment Plan are available via the website: http://www.sf-planning.org.

In conjunction with WETA's route expansion, the Port of San Francisco (Port) has been developing plans to improve the Ferry Terminal and the San Francisco Ferry Building (Ferry Building) area as both a transportation hub and an important public space for the City of San Francisco. After the 1989 Loma Prieta earthquake, the Port worked with stakeholders to develop this vision. As described in

Section 1.4.4, the Port, with the support of its stakeholders, identified a series of near- and long-term improvements that should be implemented in the Ferry Building area. Some of the improvements were implemented beginning in 1998 as Phase I of the project.

In 2010, WETA and the Port began working together to implement the remaining improvements identified for the Ferry Terminal (Phase II). In February 2010, WETA and the Port entered into a Memorandum of Understanding detailing the goals of the project, and each agency's roles and responsibilities. WETA and the FTA are developing the project, as described in this EIS/EIR, in close cooperation with the Port.

WETA has met extensively with agencies, stakeholders, and community groups to get their input concerning the preliminary concept design for the project. The preliminary concept design developed by WETA considered the extensive community input received and was used as the basis for initiating the environmental review process for the project. Chapter 6.0 details the public and agency coordination undertaken as a part of the environmental review process for the project.

2.2 NO ACTION ALTERNATIVE

The No Action Alternative maintains the existing Ferry Terminal gate configuration and circulation areas, including the function, uses, and design of public spaces within the project area. No new gates or additional boarding capacity would be provided to accommodate new WETA services or the expansion of existing WETA services as part of the No Action Alternative. Similarly, there would be no implementation of circulation and boarding improvements to respond to emergency planning requirements. Increases in passenger and water transit vessel arrivals that could be accommodated with the existing facilities at the Ferry Terminal would occur as a part of the No Action Alternative.

In addition, as a part of the America's Cup Project, several of the existing facilities within the project area will be altered pursuant to the San Francisco Bay Conservation and Development Commission's (BCDC) Special Area Plan (SAP) amendments adopted in April 2012 (BCDC, 2012). The SAP amendments require that Pier ½ (and its associated piles) be removed by March 2013. In addition, the SAP amendments require that the shed on Pier 2—which currently houses a restaurant—be vacated and removed by March 2015.[1] As of October 2012, Pier ½ had been removed.

This alternative serves as the baseline against which the environmental effects of the Action Alternative are measured. The impact analysis also includes comparisons to existing conditions, where appropriate.

2.2.1 Existing Water Transit Service on San Francisco Bay

The Ferry Terminal currently serves approximately 11,200 average weekday passengers on six water transit routes, with approximately 21 AM peak-period vessel arrivals each weekday. Of this total, the three routes operated by WETA currently serve approximately 5,100 average weekday passengers and account for 14 AM peak-period vessel arrivals, carrying 1,400 AM peak-period passengers each weekday. Under the No Action Alternative, all Ferry Terminal water transit services would continue to operate as they currently do, with the AM peak-period travel occurring generally between 6:30 and 9:00 AM, and PM peak-period travel occurring between 4:00 and 6:30 PM. All existing routes would continue to operate from their respective gates, including WETA and Blue & Gold Fleet services at Gates B and E, and Golden Gate Ferry services at Gates C and D.

Table 1-1 in Chapter 1.0 lists the service providers, and passenger and trip data for each existing route.

[1] Prior to the adoption of these Special Area Plan amendments in April 2012, the Special Area Plan required that Pier ½ and Pier 2 (including the shed) be removed as a part of the Phase II of the Downtown Ferry Terminal Project.

2.2.2 Limited Expansion of Water Transit Service with Existing Ferry Terminal Facilities

As described in WETA's approved IOP and Program EIR for the IOP, water transit service is planned to expand on San Francisco Bay (WETA, 2003b). The expansion includes both increases in passengers and frequency of existing services (refer to Table 1-2), as well as the development of new water transit routes. As described in the IOP, the following routes are assumed to be in operation by 2020:

- Antioch to San Francisco
- Berkeley to San Francisco
- Hercules to San Francisco
- Martinez to San Francisco
- Redwood City to San Francisco
- Richmond to San Francisco
- Treasure Island to San Francisco

The Program EIR analyzed the cumulative impacts, at a program level, of the development of these additional routes. As stated in the Program EIR, project-specific environmental assessments will be conducted for each route to address site-specific issues related to the siting of the new terminals that would be required for each route at the route's origin. The destination of each of these new services would be the Ferry Terminal. Therefore, as a part of the No Project Alternative, these new routes could still be developed. However, because under the No Action Alternative no improvements would be made at the Ferry Terminal, the No Action Alternative includes a limited expansion of service (vessel arrivals and/or passengers) that could be reasonably accommodated by the existing facilities at the Ferry Terminal. The increase in passengers or vessel arrivals could be associated with expansion of existing services or the addition of new routes, as would be determined by WETA, based on operational need.

Currently, WETA has access to two gates at the Ferry Terminal: Gate B and Gate E. With the existing infrastructure, for the purposes of this EIS/EIR, it is assumed that each gate could reasonably and safely accommodate a maximum of four to five vessel arrivals per hour during peak operations. Based on this and historical patterns of vessel capacity and ridership fluctuations throughout the day, it is assumed that existing infrastructure available to WETA at the Ferry Terminal could accommodate up to 7,800 passengers per weekday, 2,500 passengers during the AM peak period, 20 vessel arrivals during the AM peak period, and a total of 65 vessel arrivals per weekday. This level of water transit service could occur under the No Action Alternative.

The No Action Alternative retains vehicle circulation and drop-off areas near the Ferry Building, as well as current circulation patterns for passenger access to the vessel boarding areas. Pedestrian pathways to boarding locations for San Francisco Municipal Railway (Muni) bus and streetcar lines and the Amtrak bus would remain unchanged.

In the event of an emergency, WETA vessels deployed for evacuation purposes would use the existing two gates at the Ferry Terminal available to WETA (Gates B and E). Existing Ferry Terminal and Ferry Building areas would be used for staging of evacuees (e.g., areas along The Embarcadero). Should areas of the Ferry Terminal not built to Essential Facilities standards[2] fail or otherwise cannot be safely accessed, passengers would need to be staged elsewhere and alternative access to vessels would need to be provided.

[2] As defined by the California Building Code 2010 and the International Building Code 2009, Essential Facilities are buildings and other structures that are intended to remain operational in the event of extreme environmental loading from flood, wind, snow, or earthquakes.

2.3 ACTION ALTERNATIVE

The Action Alternative is the expansion and improvement of the Ferry Terminal at the Ferry Building to accommodate the full expansion of water transit service that was described in the IOP, and presented in Table 1-2. Based on the existing and new water transit services that would be operated by WETA, ridership on WETA services is projected to increase from 5,100 to 25,700 passengers per weekday by 2035; total AM peak-period WETA vessel arrivals are anticipated to increase from 14 to approximately 52 to 57, with approximately 181 total vessel arrivals per weekday.

To accommodate the full expansion of water transit service, the Action Alternative includes construction of three new gates and overwater berthing facilities, in addition to supportive landside improvements, such as additional passenger waiting and queuing areas and circulation improvements. Figure 2-1 depicts the project area with the proposed improvements.

The proposed project improvements have been designed to not only meet the purpose and need of WETA's expansion plans, but also in keeping with the historical significance of the area and its role as an important public gathering place in the region. The project has also been designed in close coordination with the Port, and in consideration of the Port's objectives for continued improvement of the area, including expansion of water transit services and preservation of the historic character and three historic buildings in the project area (the Ferry Building, the Agriculture Building, and Pier 1). The project elements have been designed to be consistent with the existing character and facilities in the project area (e.g., the new gates would have the same design as the existing Gates B and E).

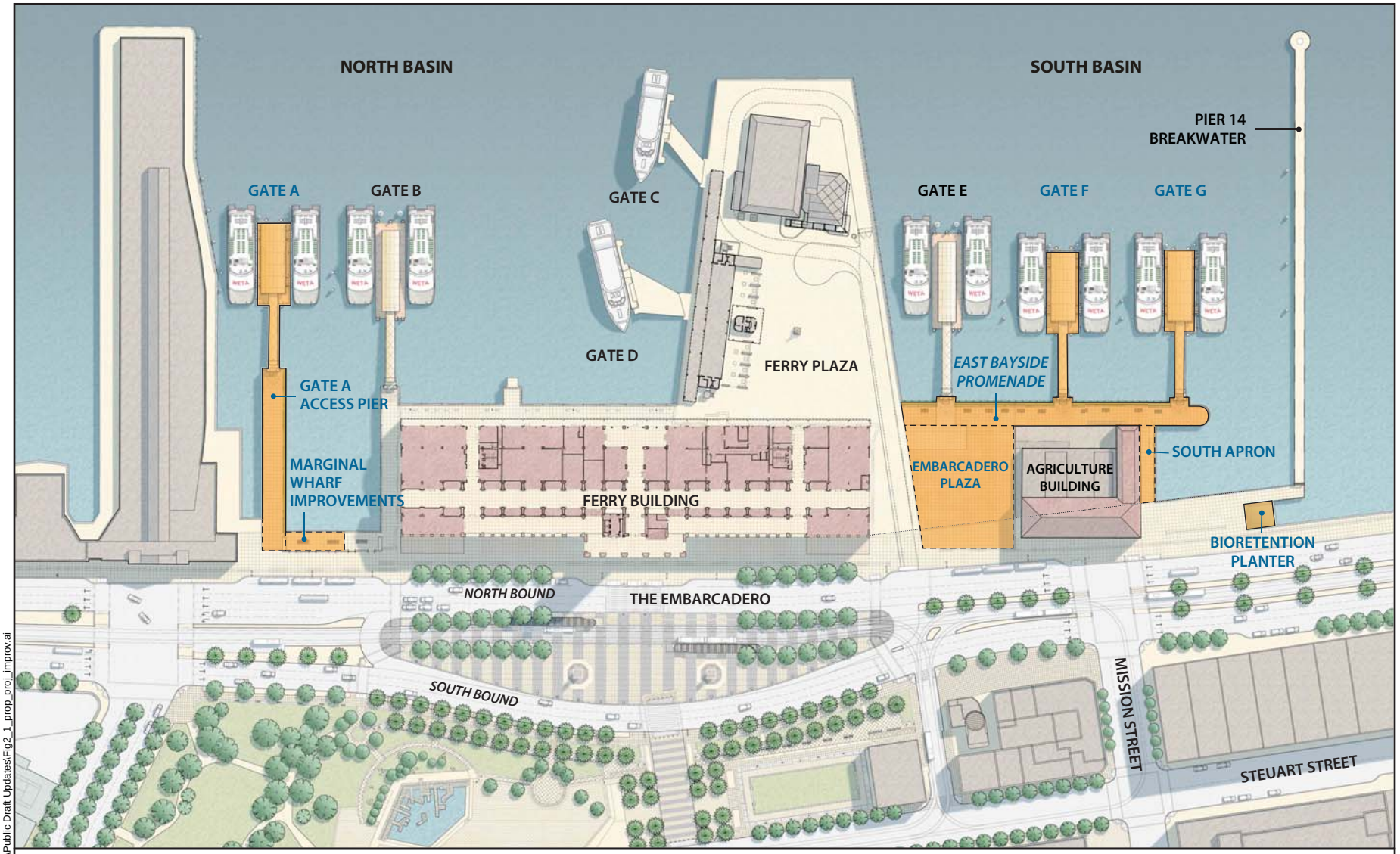
The project area encompasses property managed in the public trust by the Port from the south side of Pier 1 to the north side of Pier 14, and from the Embarcadero Promenade to San Francisco Bay. The project area includes the Ferry Building, the Ferry Plaza, the Agriculture Building, and Pier 2 (see Figure 1-1). The project area includes existing water transit facilities (Gates B, C, D, and E), a variety of commercial uses (retail, dining, and office), and public open spaces.

As described in Section 2.2, No Action Alternative, as a part of the America's Cup Project, several of the existing facilities within the project area will be altered. These alterations would be completed prior to implementation of WETA's proposed project; therefore, the project improvements described in this EIS/EIR are those improvements that would be required after demolition of these facilities as a part of the America's Cup Project.

The project includes demolition, removal, repair, and replacement of existing facilities, as well as construction of new facilities in the project area. The Ferry Terminal can generally be divided into the North Basin (areas north of the Ferry Plaza) and South Basin (areas south of the Ferry Plaza) (see Figure 2-1). The project includes the following elements:

- Removal of portions of existing deck and pile construction and fendering (portions would remain as open water, and other portions would be replaced);
- Construction of one new gate and access pier (Gate A) in the North Basin and two new gates (Gates F and G) in the South Basin; and
- Improved passenger boarding areas, amenities, and circulation, including rebuilding a portion of the marginal wharf in the North Basin; extending the East Bayside Promenade along Gates E, F, and G; strengthening the South Apron of the Agriculture Building; creating the Embarcadero Plaza; and installing weather protection canopies for passenger queuing.

The project elements are described in detail in the following sections and summarized in Table 2-1.



Areas of Project Improvements

GATE A Project Element

N

0 50 100 150 FEET

PROPOSED PROJECT IMPROVEMENTS

Downtown San Francisco
Ferry Terminal Expansion Project
San Francisco, California

28067812

FIGURE 2-1

4/01/13 vsa...T:\WETA\Draft EIR-EIS\Public Draft Updates\Fig2_1_prop_proj_improv.ai

Source: Roma Design Group, et al., 2012

Table 2-1
Summary of Demolition and New Construction

Project Element	Area	Type of Work
Pier 2 and additional deck structure in the South Basin	20,500 square feet	Demolition of deck and 350 piles.
North Basin Marginal Wharf	2,550 square feet	Strengthen piles and replace decking
South Apron of the Agriculture Building	2,400 square feet	Temporary repair of apron structure for use during construction
Gate A	Access Pier = 8,000 square feet Gangway = 1,300 square feet Float = 5,200 square feet Total = 14,500 square feet	New pier and berthing facilities for new gate; new furnishings and equipment on pier (guardrails, lights, ticket machines, etc.). Existing fendering along the edge of Pier 1 may be replaced.
Gate F	Gangway = 1,300 square feet Float = 5,200 square feet Total = 6,500 square feet	New berthing facilities for new gate, including new fendering along the East Bayside Promenade
Gate G	Gangway = 1,300 square feet Float = 5,200 square feet Total = 6,500 square feet	New berthing facilities for new gate, including new fendering along the East Bayside Promenade
Embarcadero Plaza	24,500 square feet total	Surface improvements as well as new deck and piles
East Bayside Promenade	13,850 square feet	New deck and piles; new furnishings and equipment (guardrails, lights, ticket machines, etc.)
Weather protection canopies	Gate A = 200 feet long by 20 feet wide Gate B = 200 feet long by 20 feet wide South Basin = 420 feet long by 24 feet wide	Installation of steel, glass, and photovoltaic cell overhead canopy on the pier deck

The proposed project would be located at the existing Ferry Terminal, and would not require new or additional onsite safety and security measures beyond what is described in this section (e.g., locked gates, Americans with Disabilities Act (ADA)-accessible ramps, lighting of floats and circulation areas).

Implementation of the proposed project improvements would result in a change in the amount and type of fill in San Francisco Bay. Table 2-2 summarizes the changes in fill for both the North Basin and South Basin.

2.3.1 Removal of Existing Facilities

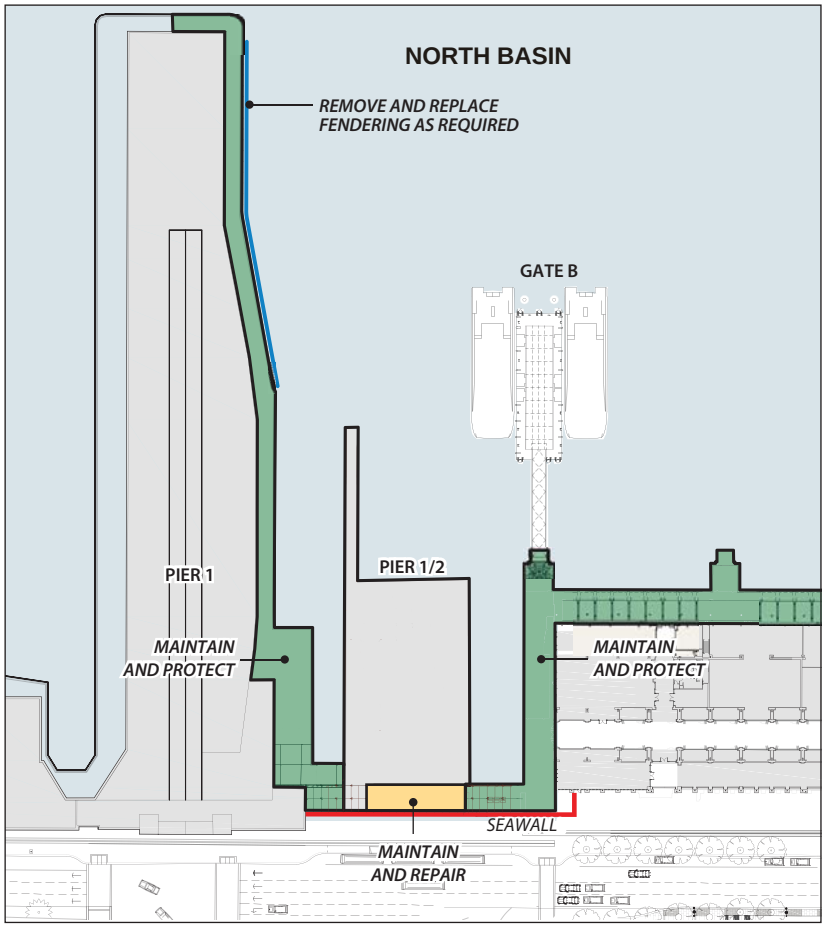
In the South Basin, Pier 2 is approximately 15,200 square feet in area, and consists of deck and pile structures.[3] Pier 2 is designated for removal in BCDC's Special Area Plan (BCDC, 2000), and the Port has determined that the substructure is also in need of repair. Accordingly, as part of the project, the following structures would be removed in the South Basin, as shown on Figure 2-2:

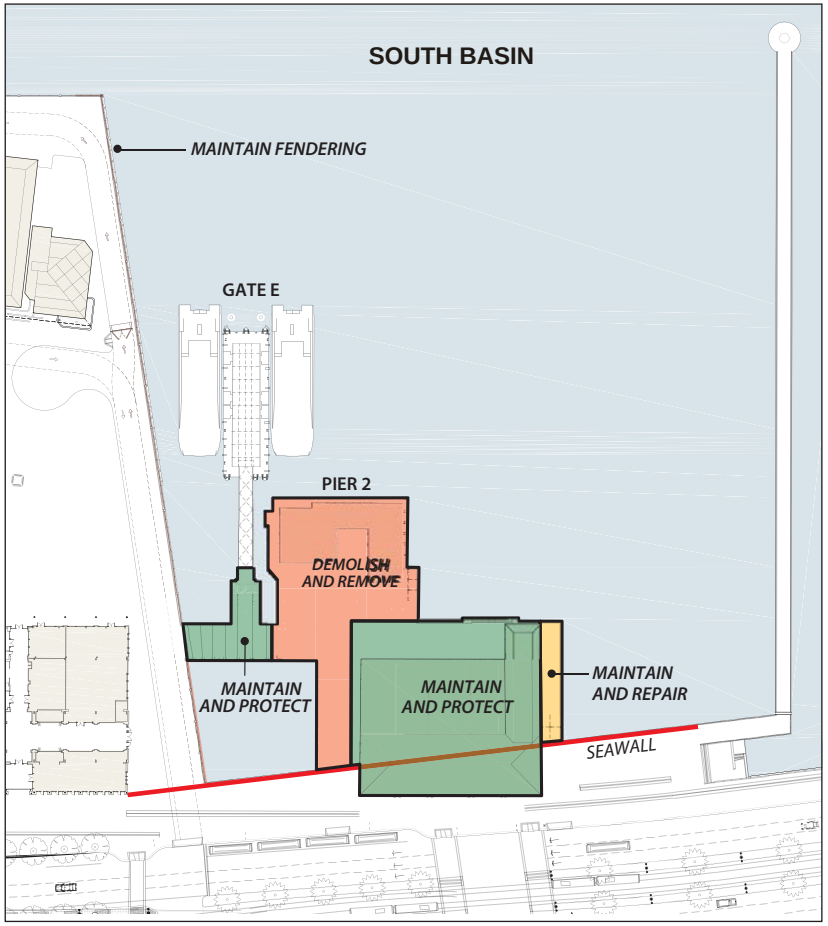
[3] A restaurant (approximately 6,000 square feet) is currently located on the eastern side of Pier 2, and will be removed as a part of the America's Cup Project by March 2015.

Table 2-2
Summary of Changes in San Francisco Bay Fill from the Action Alternative

Type of Fill/Project Element	Area of Fill Removed	Area of New Fill	Area of New Fill Considered Replacement Fill[1]	Net Change in Area of Fill[2]
North Basin				
Fill in the Bay[3]	**35 square feet**	**330 square feet**		**295 square feet**
Fender piles removed along Pier 1[4]	35 square feet			
Piles for Gate A Access Pier[5]		165 square feet	See Note 6.	
New Guide, Dolphin, and Fender Piles for Gate A		165 square feet		
Floating Fill[7]		**5,200 square feet**		**5,200 square feet**
Gate A Float		5,200 square feet		
Shadow Fill[8]		**10,000 square feet**		**10,000 square feet**
Pier Deck		8,000 square feet	7,700 square feet[9]	
Bioretention Planter along Gate A Pier		700 square feet		
Gate A Gangway		1,300 square feet		
Project Elements that would result in no change in fill				
North Basin Marginal Wharf Improvements (2,550 square feet)	n/a	n/a	n/a	n/a
Net Change in Fill in the North Basin				**15,495 square feet**
South Basin				
Fill in the Bay[3]	**1,100 square feet**	**1,150 square feet**		**50 square feet**
Piles Removed for Pier Deck[4]	1,100 square feet			
New Piles for Embarcadero Plaza and East Bayside Promenade[5]		900 square feet	See Note 6.	
New Guide, Dolphin, and Fender Piles for Gates F and G		250 square feet		
Floating Fill[7]		**10,400 square feet**		**10,400 square feet**
Gate F and G Floats		10,400 square feet		
Shadow Fill[8]	**20,500 square feet**	**34,490 square feet**	**9,760 square feet**	**13,990 square feet**
Pier Deck	20,500 square feet	29,600 square feet	9,760 square feet	
Bioretention Planters		2,290 square feet		
Gate F and G Gangways		2,600 square feet		
Project Elements that would result in no change in fill				
South Apron of the Agriculture Building Improvements (2,400 square feet)	n/a	n/a	n/a	n/a
Resurfacing of portions of pier deck[10]	n/a	n/a	n/a	n/a
Net Change in Fill in the South Basin				**24,440 square feet**

Notes:
1 Replacement fill refers to areas where fill was demolished and then rebuilt. Replacement fill is not considered in the calculation of the net change in fill, which equals the area of new fill less the area of fill demolished. Not all fill removed will be replaced.
2 Net fill is calculated as new fill less the area of fill demolished.
3 Fill in San Francisco Bay is defined as any structure placed in the water column of San Francisco Bay (e.g., piles).
4 For piles that would be removed, it was conservatively assumed all piles are only 24 inches in diameter.
5 For new piles that would support deck structures, a combination of 24-inch and 36-inch piles would be used. For the purposes of this Environmental Impact Statement/Environmental Impact Report, it was assumed that 75 percent of the piles would be 24 inches in diameter, and 25 percent would be 36 inches in diameter.
6 A portion of the new fill for piles that support pier deck would be considered replacement fill. However, for the purposes of this Environmental Impact Statement/Environmental Impact Report, the square footage for replacement fill for piles has not been calculated. This would be determined during final project design.
7 Floating Fill is defined as any structure that floats or is moored on the water surface (e.g., gate float)
8 Shadow Fill is defined as any structure placed over the water that casts shadow on the water (e.g., pier deck)
9 A portion of the Gate A Access Pier would replace portions of Pier ½ that were demolished as a part of the America's Cup Project.
10 In the South Basin, the existing access to Gate E (approximately 4,250 square feet) and an area west of the seawall (approximately 4,500 square feet) would be resurfaced (refer to Figure 2-4).





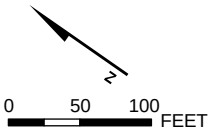
Maintain and Repair

Demolish and Remove

Maintain and Protect

Notes:
1. The America's Cup project has removed all of Pier 1/2 and will remove the building located on Pier 2 prior to project construction.
2. Portions of Pier 2 will be replaced, refer to Figure 2-1.

Source: Roma Design Group, et al, 2011



AREAS PROPOSED FOR DEMOLITON AND REPAIR

Downtown San Francisco
Ferry Terminal Expansion Project
28067812 San Francisco, California

FIGURE 2-2

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- Pier 2 would be demolished and removed (including approximately 15,200 square feet of existing deck structure); and
- Approximately 5,300 square feet of the existing deck and piles, west of Pier 2, would be removed so that the structures can be replaced with a new structure that meets Essential Facilities standards.

2.3.2 Gate Facilities

Three new gates would be constructed, comprising fixed access piers and berthing structures (floats, gangways, guide piles, dolphin piles [piles with donut-shaped impact resistant foam that rise and fall with the tides], and fendering). Each of the three gates (Gates A, F, and G) would be built similarly, in the locations shown on Figure 2-1. Each gate would be designed with an entrance portal—a prominent doorway providing passenger information and physically separating the berthing structures from the surrounding area. The entrance portal would also contain doors, which can be secured. The new gates would match the design of the existing Gates B and E, but with wider door openings and with floats constructed of concrete or steel.

Gate A Access Pier

Due to its location, Gate A would require the construction of a 30-foot-wide, 265-foot-long pier to provide access to the berthing facilities. The pier structure would be supported by approximately 40 piles, each 24 to 36 inches in diameter and spaced 12 to 16 feet apart.[4] The piles would be precast concrete or steel. The piles would be 135 to 140 feet long, would be driven approximately 125 to 130 feet below mean lower low water (MLLW) through the mud into the sand layer, and would extend 7.5 to 11 feet above MLLW. The pier structure would be designed to appropriate weight and loading requirements, and would be built to meet Essential Facilities standards. The Gate A Access Pier deck would be constructed on the piles, using a system of beam and flat slab concrete construction, similar to what has been built in the Ferry Building area. The beam and slab construction would be either precast or cast-in-place concrete (or a combination of the two), and approximately 2.5 feet thick.

As shown on Figure 2-1, similar access piers would not be required for Gates F and G, because the new berthing structures for Gates F and G would be connected directly to the East Bayside Promenade. The East Bayside Promenade is discussed in Section 2.3.3.

Berthing Structures: Float, Gangway, Guide and Dolphin Piles, and Fendering

Berthing structures—consisting of floats, gangways, guide and dolphin piles, and fendering—would be provided for each new gate. Figure 2-3 depicts a conceptual rendering of the berthing structures. The concrete or steel floats would be approximately 45 feet wide by 115 feet long. The steel truss gangways would be approximately 12 to 14 feet wide and 92 feet long. The gangway would be designed to rise and fall with tidal variations while meeting ADA requirements. The gangway and the float would be designed with canopies, consistent with the current design of Gates B and E.

Each berthing structure would require guide piles and dolphin piles. As with the piles for the pier structure, the piles for the berthing structure would all be driven approximately 125 to 130 feet below MLLW through the mud into the underlying sand layer for support. Each guide pile would be steel, 42 inches in diameter and would extend 18 feet above MLLW. Six guide piles would be required to secure each concrete float in place. Dolphin piles would be used at each berthing structure to protect against the collision of vessels with other structures or vessels. The dolphin piles would also be steel, 36 inches in diameter, would extend 20 to 25 feet above MLLW. For Gate A, it is assumed that 10 dolphin piles may be required; for Gates F and G, a total of up to 14 dolphin piles may be installed.

[4] Pile spacing is measured from the center of each pile.

In addition to the dolphin piles, chock block fendering would be added, where required, to adjacent structures to protect against collision. The chock block fendering would consist of square 12-inch-wide pressure-treated wood blocks that are connected along the side of the adjacent pier structure, and supported by round 14-inch-diameter wood piles that are 64 feet long and placed 10 feet apart. For Gate A, the existing fendering along the edge of Pier 1 could be removed and replaced with new fendering. During the final design of the project, the existing fendering along the edge of Pier 1 would be inspected to determine whether replacement is necessary. For Gates F and G, the existing fendering along the south edge of the Ferry Plaza and adjacent to Gate E would be maintained. New fendering would be constructed along the East Bayside Promenade.

2.3.3 Passenger Boarding and Circulation Areas, and Amenities

In addition to providing new water transit gates, the project would improve passenger boarding and circulation areas in the project area. Figure 2-4 depicts the structural improvements proposed within the project area. As described in Section 1.5.2, Purpose and Need, improvements are needed because there are currently circulation bottlenecks and use conflicts between water transit passengers, users of the Ferry Building, and delivery vehicles.

Table 2-3 summarizes the areas needed for passenger queuing at each gate.

Table 2-3
Boarding Areas

Gate	Proposed Queuing Area (approximate square feet)
A	3,500
B	3,500
E, F and G	10,500

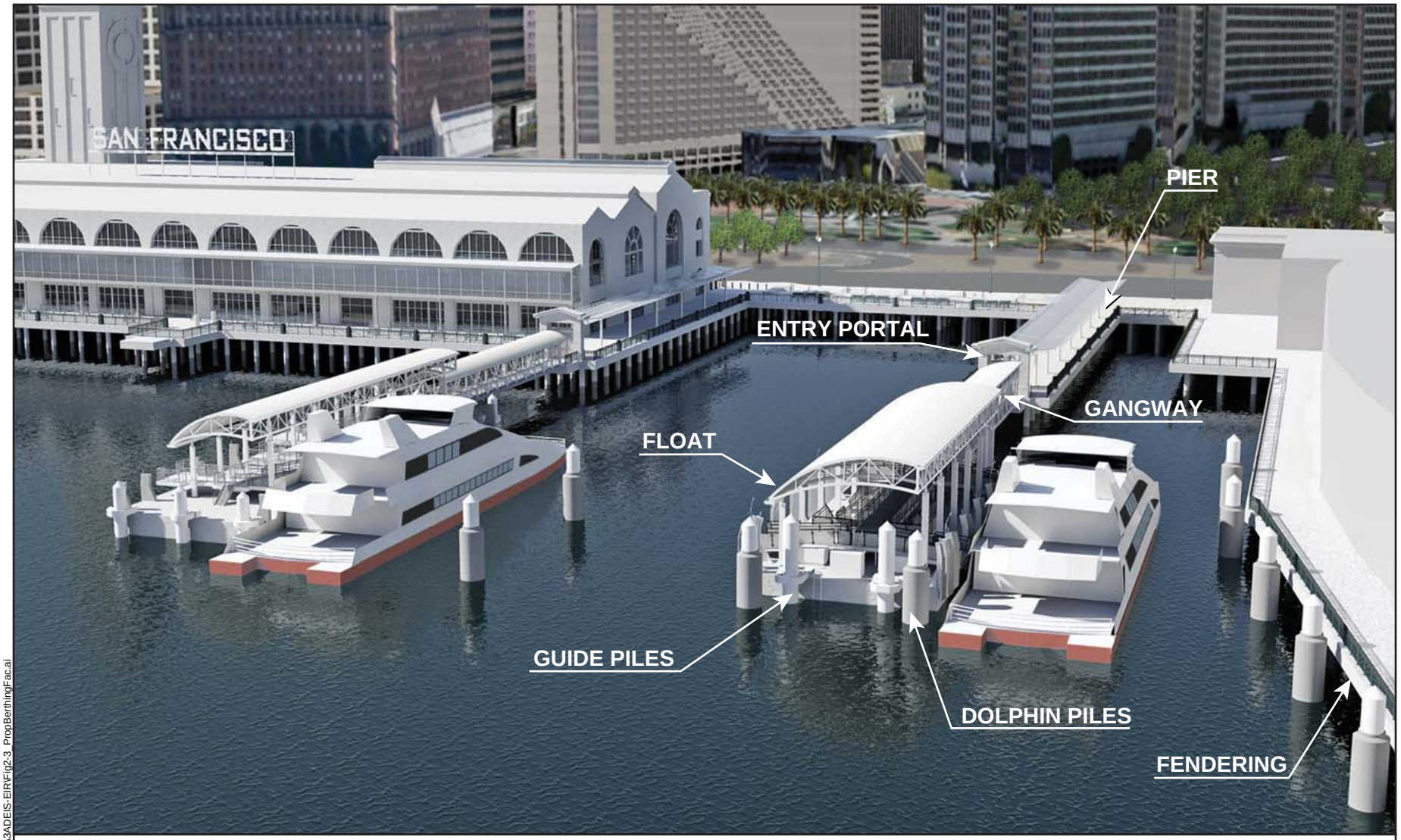
Note: Queuing area assumes 7 to 10 square feet per passenger, and 15 to 20 square feet for passengers with bicycles (ROMA, 2012).

The improvements described in this section are intended to ensure that water transit passengers for WETA's existing and new gates have adequate areas to queue while waiting to board their vessel, without causing congestion and use conflicts with the other activities in the project area. Additional bike rack space would be provided in proximity to each of the new gates.

North Basin Marginal Wharf

At the western edge of Gate A, where the new fixed pier connects with the Embarcadero Promenade, an 85-foot-long segment of the marginal wharf would be repaired and strengthened to provide a contiguous edge between the new Gate A Access Pier and the Ferry Building Area (see Figure 2-4). The northern portion of the marginal wharf (north of the new Gate A) and a portion of the marginal wharf closest the Ferry Building (north of the existing Gate B) were both previously improved by the Port. As a part of this project, the remaining marginal wharf would be repaired and strengthened. The repair work would involve strengthening the 12 existing piles supporting the deck structure, and the rebuilding of the deck structure. The rebuilt deck structure would be constructed using beams and slab. The new decking would be approximately 18 inches above grade to match the grade of the portion of the marginal wharf recently improved by the Port, and would also include new guardrails.

A conceptual rendering of the North Basin with the project improvements is shown on Figure 2-5.



Note:
Gate A shown; berthing facility would the same for Gates F and G.

PROPOSED BERTHING FACILITIES

Downtown San Francisco
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FIGURE 2-3

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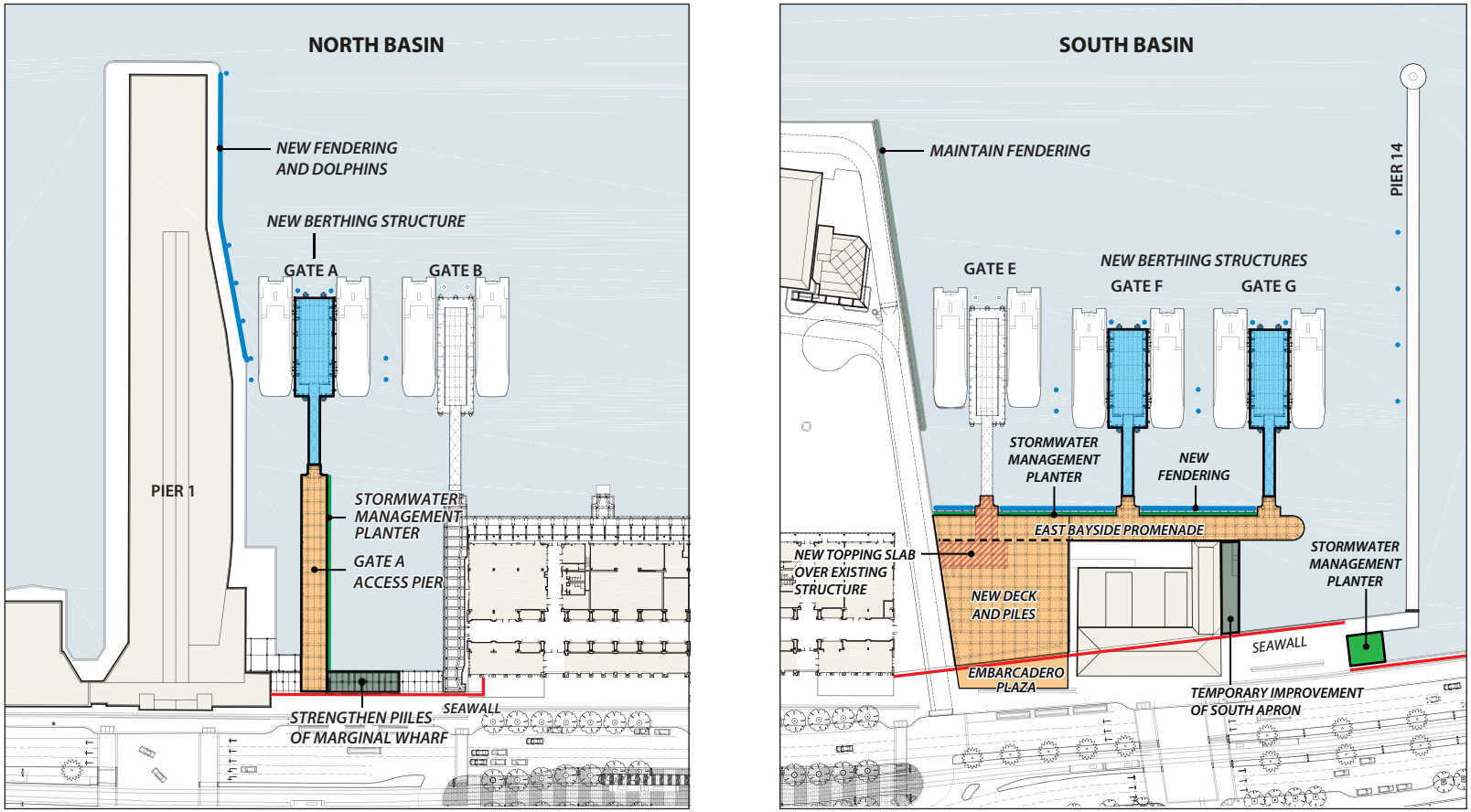
Source: Roma Design Group, et al, 2011



New Berthing Structure

Repair and Improvements

New Deck and Piles

Stormwater Management Planter

N

0 100 200 FEET

AREAS PROPOSED FOR IMPROVEMENT

Downtown San Francisco
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FIGURE 2-4

Source: Roma Design Group, et al, 2012

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SIMULATED VIEW OF NORTH BASIN IMPROVEMENTS

Downtown San Francisco
Ferry Terminal Expansion Project
28067812 San Francisco, California

FIGURE 2-5

Source: Roma Design Group, et al, 2011

Embarcadero Plaza, East Bayside Promenade, South Apron of the Agriculture Building

In the South Basin, the following improvements would be made to provide for improved passenger circulation, as shown on Figure 2-4:

- Creation of an Embarcadero Plaza;
- Extension of the East Bayside Promenade; and
- Improvement of the South Apron of the Agriculture Building.

A new Embarcadero Plaza would be created in the South Basin, forming a new continuous plaza area between the Agriculture Building and the Ferry Building where there is currently a small open water area. The new Embarcadero Plaza would be built to meet Essential Facilities standards, because it would be needed to support queuing and circulation needs for evacuation purposes in the event of an emergency. The Embarcadero Plaza would require new deck and pile construction to fill an open water area and replace subgrade structures. The Embarcadero Plaza would be designed to meet ADA-required slopes and stormwater drainage requirements, and to conform to existing elevations of the Embarcadero Promenade, Ferry Building, and Gate E. Features and design treatments such as seatwalls, steps, bicycle racks, planters, and other furnishings would be incorporated into the final design.

To the east and south of the Embarcadero Plaza, the project would expand the East Bayside Promenade approximately 460 feet in length to provide a 30-foot-wide connection along Gates E, F, and G. The eastern edge of the Promenade would include a guardrail. The extension of the Promenade would require installation of piles and new decking.

The construction of the Embarcadero Plaza and East Bayside Promenade would require installation of approximately 210 piles, each 24 to 36 inches in diameter and 135 to 145 feet in length. As with the pier structures, the piles would be precast concrete or steel. The new deck would be concrete, either precast or cast in place (or a combination of the two), and approximately 2.5 feet thick.

The South Apron of the Agriculture Building would be upgraded to temporarily support access for construction and improve passenger circulation. The improvements would include construction of steps and an ADA-accessible ramp to meet the grade of the improved East Bayside Promenade, as well as a guard rail along its edge. It is anticipated that the South Apron would be fully replaced and rebuilt when the Agriculture Building eventually undergoes rehabilitation and renovation as a separate project.

A conceptual rendering of the South Basin with the project improvements is shown on Figure 2-6.

Weather Protection Canopies

In the North Basin, a weather protection canopy structure would be constructed to span the length of the new Gate A Access Pier, as shown on Figure 2-5. The structure would provide weather protection and information for queuing and waiting passengers. The weather protection canopy structures would be approximately 20 feet wide, 200 feet long, 18 to 20 feet high, and constructed of steel, glass, and could include photovoltaic cells. Features of the weather protection canopy structure would include lighting, passenger information, and benches. A weather protection canopy structure, similar in design to Gate A, would also be constructed along the north edge of the Ferry Building to provide weather protection for passengers queuing at the existing Gate B.

In the South Basin, a similar water protection canopy structure would be constructed along the East Bayside Promenade, perpendicular to Gates E, F, and G, as shown on Figure 2-6. This canopy would be approximately 420 feet long and 24 feet wide.

2.3.4 Circulation Improvements

The project would also include improvements to circulation in the Ferry Building area.

In the North Basin, the canopy installed for Gate B would serve to organize the queuing of passengers waiting to board a vessel along the north railing, allowing other users of the Ferry Building area to pass through that area unimpeded.

In the South Basin, the East Bayside Promenade and associated canopy would also serve to organize passenger queuing and reduce use conflicts. The creation of the Embarcadero Plaza would greatly enhance passenger circulation to Gates E, F, and G, allowing free movement, and eliminating the current pedestrian bottlenecks and use conflicts at the southeastern corner of the Ferry Building. Figure 2-7 depicts the paths of anticipated pedestrian circulation through the project area. Because the project would improve pedestrian flow, pedestrian congestion in the fire lane would be reduced, ensuring that emergency access is maintained.

The project would change pedestrian circulation patterns in the project area; however, vehicular access would remain unchanged. Delivery trucks and emergency and maintenance vehicles would maintain their current access to the Ferry Plaza area, south of the Ferry Building. The project would not affect the Ferry Plaza function or access. All project improvements would occur within areas directly controlled by the Port, and would not affect, encroach upon, or modify any property or access to property under the control of other entities, including rights-of-way in the project area. The improvements along the northern edge of the Ferry Building would be located within an existing maintenance easement for the Ferry Building held by Equity Office Partners (the leaseholder for the Ferry Building); responsibility for maintenance of the new facilities would be set forth in a Site Maintenance Plan developed by the Port and WETA in coordination with Equity Office Partners; refer to Section 2.3.6, Site Maintenance.

In addition to the physical changes relating to circulation around the Ferry Terminal, the project would include passenger wayfinding and information signage at various places throughout the project area, providing clear information for passengers arriving at and departing from Downtown San Francisco. The wayfinding signage program would also be designed to provide information for passengers arriving in San Francisco regarding the location of other transit links (i.e., Bay Area Rapid Transit, Muni, or Amtrak). Wayfinding signage would also include directions for cyclists to walk on the water side of The Embarcadero, to improve safety and reduce conflicts. The future water transit services would operate in accordance with the Transit Transfer Agreements in place between WETA and the other transit providers at the time of operation.

2.3.5 Design Considerations

The following elements would also be incorporated into the project design.

Sea Level Rise

The ground floor of the Ferry Building is built to an approximate elevation of 11.8 feet above MLLW. This elevation could accommodate approximately 2.5 feet of anticipated sea level rise above the still water level[5] of 9.2 feet resulting from a 100-year storm event, should that event occur in the near future (Moffatt & Nichol, 2012). The still water level for the 100-year storm, should it occur in 2050, is estimated to be 10.5 feet (MLLW), taking into account a predicted sea level rise of 16 inches by 2050. Gates B and E are built to 11.4 feet and 11.8 feet above MLLW, respectively. The new gates would be built at 13 to 13.5 feet above MLLW, which would accommodate approximately 3 to 4 feet of anticipated sea level rise above a 100-year storm event of 9.2 to 10.5 feet (MLLW), should such an event occur during the 50-year design life of the new gates, and would conform to the existing elevations of the project area to meet drainage and ADA accessibility requirements.

[5] The still water level is the water level that includes tides and storm surge. The still water level does not include waves and wave run-up.

SIMULATED VIEW OF SOUTH BASIN IMPROVEMENTS

Downtown San Francisco
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28067812 San Francisco, California

FIGURE 2-6

Source: Roma Design Group, et al, 2011

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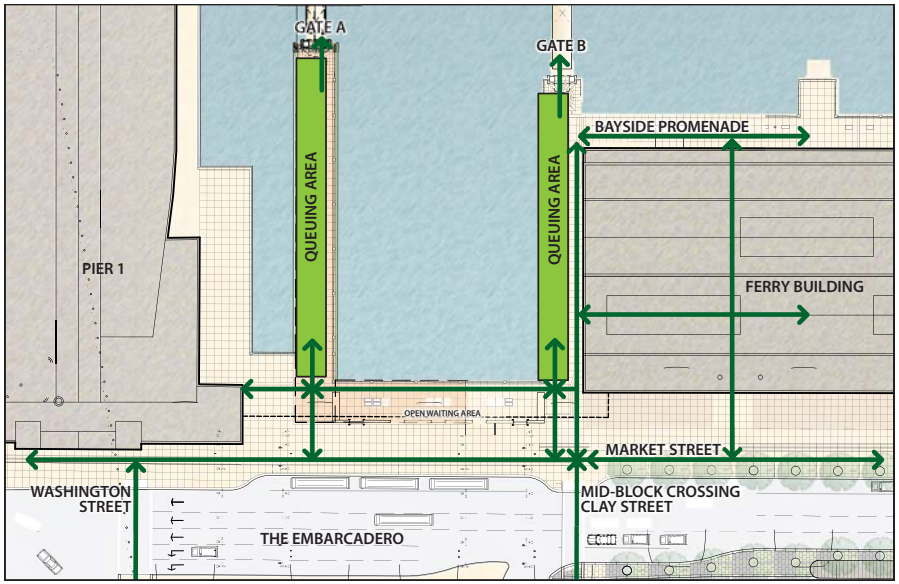
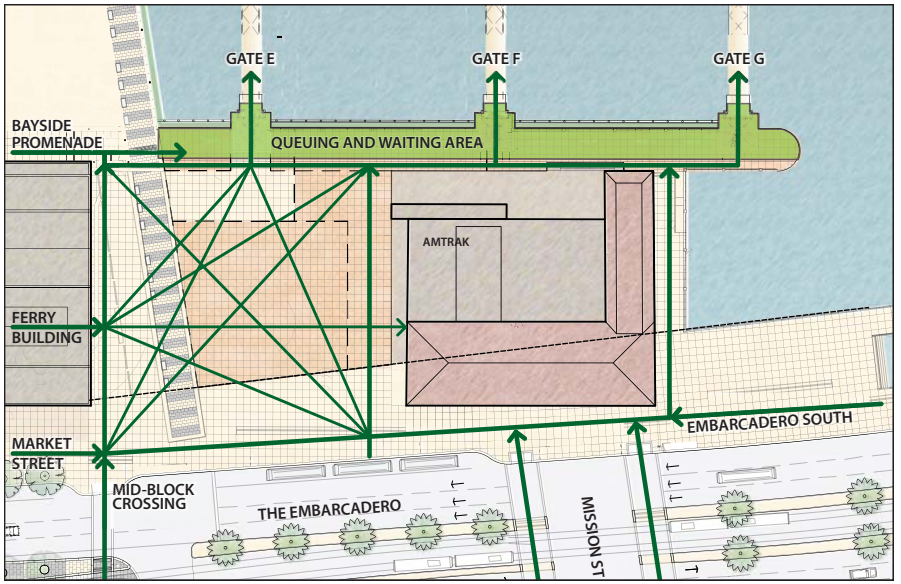


Gates A and B - Queuing, Waiting and Pedestrian Desire Lines



Gates E, F and G - Queuing, Waiting and Pedestrian Desire Lines

ANTICIPATED PEDESTRIAN CIRCULATION PATTERNS

Downtown San Francisco
Ferry Terminal Expansion Project
28067812 San Francisco, California

FIGURE 2-7

Source: Roma Design Group, et al, 2011

Stormwater Management

Stormwater runoff in the project area currently drains directly to San Francisco Bay. As a part of project final design, WETA would develop a stormwater management plan, in compliance with CCSF and the Port's stormwater management guidelines. The preliminary project design for new construction includes several bioretention planters that would filter stormwater before it enters San Francisco Bay. Bioretention planters or media filters could be used to filter stormwater. The decision on the specific type, design, and location of stormwater filters within the project area would be determined during final design in coordination with the Port and the permitting agencies.

For the purposes of this EIS/EIR, both types of treatment are described and will be considered in the analysis of the project. Bioretention planters—each approximately 3 feet in width and 3 feet in depth, and composed of 1½ feet of bioretention soil mix and 1 foot of drainage rock—would provide for ½ foot of ponding. Planters would be placed so that their bottoms are above the highest estimated tide. Planters could be located along the south side of the new Gate A Access Pier to capture stormwater from the new pier, and along the East Bayside Promenade to capture runoff from the new promenade.

The Embarcadero Plaza would be designed to drain predominantly to the west (to conform to the grade changes in the project area). Along the northern and western edges of the plaza area, a seismic joint would also be required. This joint would be designed to allow seismic movement and could also be designed to convey water for stormwater treatment to a media filter (sand filter). Alternatively, a landscaped stormwater bioretention and water quality treatment area adjacent to the promenade and the Pier 14 breakwater could be installed to treat stormwater from the Embarcadero Plaza before it enters San Francisco Bay.

Green Building

The project would incorporate green building approaches to the design of the new facilities in several key ways. It may be constructed as a zero net energy project, which would be achieved through the use of photovoltaic cells incorporated into the canopies at Gates A, B, E, F, and G (see the Lighting and Utilities subsection of Section 2.3.6, Operating Elements). In addition, the project is designed in response to state, regional, and local standards for stormwater management and water quality, and would also include sustainable construction materials and methods, as required by the San Francisco Green Building Ordinance, Chapter 13 of the San Francisco Building Code.

Architectural Considerations

The preliminary design of the project was developed in coordination with the Port, and in consideration of the input of various interested parties (community groups, businesses in the project area, and agencies with jurisdiction in the project area). As discussed previously, the project area serves as an important public space in San Francisco. The project's location between San Francisco Bay and the Downtown urban core and within an area with historic significance were all considered in the project design, to develop a design that not only met WETA's objectives but also blended into and complemented the context of the site. Details regarding the final design of the proposed project (e.g., colors, textures, and finishes) would be developed through the design review process (refer to Section 2.6).

2.3.6 Operating Elements

As described in Chapter 1.0 and Table 1-2, new WETA services are anticipated to begin operations between 2015 and 2020. This section describes elements of the proposed project's operation, including implementation phasing and vessel characteristics, and information on the navigation, dredging and lighting, and utility requirements for the new gates. Refer to Table 1-2 for service frequencies and future year ridership projections for the new and existing WETA services.

WETA Implementation Plan for San Francisco Ferry Terminal Service

WETA has developed an implementation plan for operating its new and existing services at the Ferry Terminal. The plan describes the services that would be operated at each gate and confirms that adequate berthing and circulation capacity would be provided. Anticipated gate locations were determined for each service based on projected ridership, service frequency, queuing and boarding needs, navigational concerns, and dredging requirements. Anticipated service start dates were also considered in determining gate location for each service, in order to accommodate a strategy for phased construction of the project.

In the North Basin, WETA plans to operate the existing Vallejo service and new services to Berkeley and Richmond at the existing Gate B and new Gate A. It is also assumed that Blue & Gold Fleet would continue to operate its Tiburon service in the North Basin. Under this scenario, Gates A and B would support a projected total of 6,400 daily passengers, 2,500 AM peak-period passengers, and 19 to 20 AM peak-period vessel arrivals. The Berkeley and Richmond services could begin operations as early as 2015, at which point the proposed North Basin improvements would be required. In the long term, the North Basin can also accommodate other North Bay routes such as Hercules, Antioch, and Martinez, supporting a projected total of 8,000 daily passengers by 2035.

In the South Basin, WETA plans to operate the existing Alameda/Oakland and Alameda Harbor Bay services from the new Gate F, and new service to Treasure Island from the existing Gate E. In the long term, Gate F would accommodate a projected total of 6,700 daily passengers, 2,000 AM peak-period passengers, and 15 AM peak vessel arrivals for the Alameda/Oakland and Alameda Harbor services by 2035. Gate E would accommodate 10,750 daily passengers, 2,400 AM peak-period passengers, and 10 AM peak-period arrivals for the Treasure Island service at build-out. Gate G would accommodate the Redwood City services and provide spare berthing capacity to accommodate emergency evacuations, guest or visiting vessels, layover berthing, and the ability to maintain operations should an existing berth be taken out of service for maintenance or repair. In addition, Gate G could serve other Central or North Bay routes, as operational needs require. The services that would be accommodated in the South Basin are anticipated to begin operations between 2017 and 2020, at which point the South Basin improvements would be required.

As described, based on current planning and operating assumptions, WETA would not require all three new gates (Gates A, F, and G) to support existing and new services until 2020. As a result, WETA is planning that project construction would be phased. The first phase would involve construction of Gate A and all related improvements in the North Basin, as the initial expansion services developed by WETA (Berkeley and Richmond routes) would be operated in the North Basin. The second phase would include construction of Gates F and G, as well as other related improvements in the South Basin. This work could commence as early as 2017 to support operations of the Treasure Island service. If necessary, WETA could begin construction of some North and South Basin improvements simultaneously. Refer to Section 2.4.6 for more information on the construction schedule.

While certain gate locations have been assumed for particular services, the project would be designed to ensure maximum operational and implementation flexibility. For instance, the project would include standardized berthing facilities at each new gate that would be capable of accommodating all WETA vessel types, thus allowing WETA to interchangeably operate any service from any gate, as conditions or phased construction of the project requires.

The project improvements would not require operational staff to be located at the Ferry Terminal. All current and future WETA vessels will be stocked and serviced at other terminal locations. Vessel crews would also board in the outlying terminal locations.

Vessel Characteristics

The vessels that would be used for the operation of the new routes are described in Table 2-4.

Table 2-4
Vessel Characteristics

Vessel Type	Dimensions	Operating Speed	Passengers	On-Board Amenities
High-speed aluminum catamaran (side loading); propeller propulsion	135 feet long by 39 feet wide	25-knot maximum speed	Passengers: 299	Snack bar, restrooms, bicycle facilities
High-speed aluminum catamaran (side loading); hydro jet propulsion	135 feet long by 39 feet wide	34 knots fully loaded, 38 knots maximum	Passengers: 299	Snack bar, restrooms, bicycle facilities

The vessels for WETA's services use U.S. Environmental Protection Agency (U.S. EPA) and California Air Resources Board Tier 2–compliant clean diesel engines, which emit approximately 25 to 30 percent less reactive organic gas, oxides of nitrogen (NO_X), and particulate matter less than 10 microns in diameter (PM_{10}) than current diesel engines. In addition, add-on control devices such as selective catalytic reduction and particulate traps would further reduce NO_X and PM_{10} emissions to 10 percent and 5 percent, respectively, of U.S. EPA Tier 2 levels. The development of electrically powered vessel technology has not reached the stage where it has been proven that such vessels can practically and cost-effectively provide service on commuter routes. WETA will continue to evaluate technologies that would further reduce emissions**.**

Vessel Navigation and Berthing

To ensure safe navigation in and around the Ferry Terminal for existing and new water transit services, vessel routes would be managed to avoid cross traffic. Generally, the North Basin (Gates A and B) would be used by WETA for routes to and from the northern portion of San Francisco Bay (Vallejo, Tiburon, Berkeley, Richmond, Hercules, Martinez, and Antioch). The South Basin would be used for WETA routes originating in the central and southern portion of San Francisco Bay (Alameda/Oakland, Alameda Harbor Bay, Treasure Island, and Redwood City). The proposed facilities would not impede the ability of other users in the project area (e.g., Golden Gate Transit [GGT], the Bay Area Rapid Transit [BART], or emergency responders) to access their facilities from the water side.

Vessel navigation would be planned and carried out in accordance with U.S. Coast Guard notification, regulations and guidance pertaining to safety. WETA would provide the U.S. Coast Guard with information pertaining to project construction and operations that could impact navigation. The U.S. Coast Guard issues "Notices to Mariners," relating information to the public on potential navigation issues (e.g., a construction project in the water).

Maintenance Dredging Requirements

Based on observed patterns of sediment accumulation in the Ferry Terminal area, significant sediment accumulation would not be expected, because regular maintenance dredging is not currently required to maintain operations at existing Gates B and E. However, some dredging would likely be required on a regular maintenance cycle beneath the floats at Gates F and G, due to their proximity to the Pier 14 breakwater. It is expected that this minor maintenance dredging would be required at Gates F and G every 3 to 4 years, and would require removal of approximately 5,000 to 10,000 cubic yards of material. It is not anticipated that a regular maintenance cycle of dredging would be required at Gate A.

Dredging and disposal of dredged materials would be conducted in cooperation with the San Francisco Dredged Material Management Office, to comply with the requirements of the Dredging – Dredge Material Reuse/Disposal permit that would be issued by the U.S. Army Corps of Engineers. Requirements would include development of a sampling plan, sediment characterization, and a sediment removal plan; and disposal in accordance with the Long-Term Management Strategy for San Francisco Bay to ensure beneficial reuse, as appropriate.

Lighting and Utility Requirements

Each berthing facility would be designed with lighting similar to what is used on the floats and gangways at Gate B and Gate E—internal lighting fixtures that project light onto the roof of the existing canopies, creating a glow that produces enough light for pedestrian safety and security. Lighting integrated with the new canopy design would be installed along the public circulation and access areas. Some additional pedestrian-scale lighting would also be provided within the Embarcadero Plaza. The lighting would be similar in fixture size and light levels to what is currently used in the Ferry Building area.

The total energy requirements for the additional lighting, communications, security, and hydraulic ramps would be approximately 140,000 kilowatt hours per year (ROMA, 2012). To offset this demand, the weather protection canopies constructed along the Gate A Access Pier, Gate B queuing area, and perpendicular to Gates E, F, and G could be designed with photovoltaic cells. The energy generated from the photovoltaics would be expected to exceed the energy demand for the project lighting. Approximately 200,000 kilowatt hours could be generated on site. The preliminary design of the project improvements includes the photovoltaic cells. The decision on whether the photovoltaic cells would be constructed would be made during the project's final design phase, based partly on public and agency input received on the EIS/EIR.

Emergency power would be required onsite and would be provided by a centrally located generator serving the Port and WETA facilities. The exact size and location of the generator would be determined in consultation with the Port.

In addition, a small amount of potable water would be required at each gate and would be provided by CCSF.

Site Maintenance

WETA and the Port would develop a Site Maintenance Plan prior to project initiation. The Plan would designate responsibility and a schedule for regular maintenance and cleaning of the new facilities (e.g., canopies), as well as general site maintenance activities (e.g., wash-down; litter removal and trash receptacle management; lighting and landscape management). For any new facilities along the northern edge of the Ferry Building, the Site Maintenance Plan would also be coordinated with Equity Office Partners, who currently have maintenance responsibilities in that area through their lease and management of the Ferry Building.

2.3.7 Emergency Planning

Along with the project goal of expanding and improving water transit facilities to meet existing and projected ridership demand for commuter services, the project would also improve facilities that would support emergency operations when unexpected and long-term disruption renders other components of the regional transportation system inoperable.

WETA's emergency planning includes developing scenarios for evacuation. For a large evacuation, WETA could operate up to six 299-passenger vessels per hour from each of its gates. Therefore, the existing and new gates (Gates A, B, E, F, and G) would have a total emergency evacuation capacity of up to 9,000 passengers per hour.

The passengers would be queued at WETA's existing and new gates, as well as in the circulation areas that would be created in the North and South Basin as a part of the project. In the North Basin, approximately 12,000 square feet built to Essential Facilities standards would be available for passenger staging. In the South Basin, a total of approximately 38,100 square feet built to Essential Facilities standards would be available for emergency response and passenger staging (approximately 26,500 square feet in the Embarcadero Plaza, and 11,600 square feet in the East Bayside Promenade).

2.4 CONSTRUCTION METHODS

This section describes the methods that would be used for demolition, construction of piers and berthing structures, and circulation improvements. Construction activities would commence as early as 2014. In addition, this section describes the construction staging, equipment staffing, and schedule. The information provided is based on the Downtown San Francisco Ferry Terminal Design Concept Plan (ROMA, 2012). During final design, additional construction method detail would be developed related to all construction aspects.

General best management practices for pollution prevention and construction management would be employed during construction. For example, best management practices would include activities such as maintaining a clean and orderly construction site, and erecting wayfinding signage to assist water transit passengers and other users of the project area in navigating the project area. In addition, WETA would notify residents and businesses near the project area of planned construction, and would establish a point of contact for public questions or concerns.

2.4.1 Demolition Methods, Disposal, and Duration

Demolition of existing deck and pile structures, as described in Section 2.2, would be conducted from barges. Two barges would be required, one for materials storage and one outfitted with demolition equipment (crane, clamshell bucket for pulling of piles, and excavator for removal of the deck). Diesel power tug boats would bring the barges to the project area, where they would be anchored.

Piles would be removed by either cutting them off below the mud line or pulling the pile. The demolition waste from these activities would be disposed of at the nearest waste and recycling facility. Piles that have been treated with creosote, or that contain other potentially hazardous substances, would be handled properly and disposed of at a facility permitted to handle hazardous waste.

It is estimated that demolition activities would generate approximately 4,720 cubic yards of waste.

Demolition activities in the South Basin would take approximately 2 months. Demolition methods are summarized in Table 2-5.

Table 2-5
Summary of Demolition Methods

Demolition Element	Summary
South Basin Piles	350 piles
South Basin Deck	Approximately 20,500 square feet
Demolition Staging	One equipment barge with a crane, one material storage barge
Typical Equipment	Crane, clamshell bucket, excavator with jaws
Duration	2 months

2.4.2 Construction Techniques, Materials, and Duration

Gate A Access Pier

The Gate A Access Pier would require the installation of piles and structural deck. Construction methods for the Gate A Access Pier are summarized in Table 2-6. Piles for the new pier would be precast concrete or steel. They would be delivered by barge and vibrated or driven in place by an impact hammer from barges.

Table 2-6
Summary of Construction Methods for Gate A Access Pier

Construction Element	Summary
Piles	40 concrete or steel piles, 135 to 140 feet long
Decking Construction Method	Cast-in-place or precast
Construction Staging	On barges for structural pier construction; on Gate A Access Pier and marginal wharf once constructed for finishing elements (e.g., railings, portal, canopy)
Materials and Deliveries	Piles, precast decking, and canopy would be delivered by barge For cast-in-place decking method: 446 cubic yards (47 truckloads) Finishing concrete: 140 cubic yards (15 truckloads)
Typical Equipment	Major equipment would include a vibratory or impact hammer located on a barge, a diesel tugboat, gasoline utility boats, concrete trucks and pumpers, diesel/electric scissors lifts, diesel cherry pickers, electric/liquid gas/diesel forklifts, scaffolding, arc welders with diesel generators, and a variety of small tools such as table saws, welders, and drills
Duration	4 months for structural work; 5 months for surface improvements

The structural deck would be constructed on top of the piles. Rebar cages for the pile connections and concrete would be delivered by truck and installed on the piles at the site. The concrete deck would be precast, cast-in-place, or a combination of both methods. If a precast deck is used, the precast segments would be delivered on barges and placed on steel falsework. A cast-in-place deck would require formwork as well as falsework, and more extensive concrete delivery by truck during construction.

A topping slab would be installed on the structural deck. It would be composed of a concrete mix of an architectural quality similar to that in the area of the Ferry Building. The passenger facilities, amenities, and public space improvements—such as the entrance portal, weather protection canopy structures, lighting, guardrails, and furnishings—would be surface-mounted on the access pier after the new construction is complete. The weather protection canopy and entrance portal would be constructed off site, delivered to the site, craned into place by barge, and assembled on site. The glazing materials, cladding materials, unit pavers, guardrails, and furnishings would be delivered to the site via truck and assembled on site. Once completed, the structural pier for Gate A would be used for material storage and for construction staging, in addition to material and construction barges.

The weather protection canopy structure for Gate B would be constructed in the same manner as described above for the Gate A weather protection canopy structure.

Berthing Structures

The berthing structures for Gates A, F, and G consist of concrete or steel floats, steel gangways, guide piles, and dolphin piles. The berthing structures would be fabricated off site and floated to the project

area by barge. The guide and dolphin piles would be installed on site, would be steel, and would be installed with a vibratory or impact hammer.

Additionally, fendering may be constructed along the edge of Pier 1 and along the edge of the East Bayside Promenade adjacent to Gates E, F, and G. The fendering would also be constructed from a barge.

Construction methods are summarized in Table 2-7.

Table 2-7
Summary of Construction Methods for Berthing Structures

Construction Element	Summary
Piles	Six steel guide piles for each float (i.e., Gates A, F, and G) (42 inches in diameter; 140 to 150 feet long); 24 steel dolphin piles total for all three gates (36 inches in diameter; 145 to 155 feet long)
Fendering	"Chock Block" installed along Pier 1 (if needed) and the East Bayside Promenade; 330 linear feet in each basin, requiring 33 piles in each basin.
Construction Staging	On barges
Materials and Deliveries	Piles delivered by barge Berthing structure floated into the project area
Typical Equipment	Major equipment would include a vibratory or impact hammer located on a barge, a diesel tugboat, gasoline utility boats, and a variety of small tools for utility and electrical hook-ups
Duration	3 months for Gate A; 4 to 5 months for the South Basin gates

North Basin Marginal Wharf

In the North Basin, a portion of the marginal wharf south of Gate A would be repaired. Repair would involve strengthening existing piles with installation of steel jackets and concrete and construction of a new deck structure. The new deck structure would be cast-in-place concrete and constructed with a seat wall to be consistent with the adjacent marginal wharf. Construction methods for the repair of the marginal wharf are summarized in Table 2-8.

Table 2-8
Summary of Construction Methods for North Basin Marginal Wharf

Construction Element	Summary
Piles	Strengthened
Decking Construction Method	Cast-in-place
Construction Staging	On barges
Materials and Deliveries	Concrete deliveries: 142 cubic yards (15 truckloads)
Typical Equipment	Major equipment would include an equipment and material barge, a diesel tugboat, concrete trucks and pumpers, and a variety of small tools for concrete and ironwork
Duration	4 months

Embarcadero Plaza, East Bayside Promenade, South Apron of the Agriculture Building

A new Embarcadero Plaza and East Bayside Promenade would be constructed in the South Basin. These new deck and pile areas would use the methods and materials described above for the Gate A pier structure. The piles would be either precast concrete or steel, and the decking would be either cast in place or precast.

In the South Basin, the South Apron of the Agriculture Building would also be repaired and strengthened. Work would include installation of elements such as new railing, ramps, and steps.

The passenger facilities, amenities, and public space improvements—such as the entrance portals, canopy structures, lighting, guardrails, and furnishings—would be surface-mounted on the pier structures after the new construction and repair is complete. The canopy and entrance portal would be constructed off site, delivered to the site, craned into place by barge, and assembled on site. The glazing materials, cladding materials, unit pavers, guardrails, and furnishings would be delivered to the site via truck and assembled on site. The structural pier for the deck of the Embarcadero Plaza, when completed, would be used for material storage and for construction staging, in addition to material and construction barges.

Construction methods for the South Basin circulation improvements are summarized in Table 2-9.

Table 2-9
Summary of Construction Methods for South Basin Circulation Improvements

Construction Element	Summary
Piles	210 steel or precast concrete piles
Decking Construction Method	Cast-in-place or precast
Construction Staging	Equipment and materials supply barges
Materials and Deliveries	Piles and precast decking would be delivered by barge. For cast-in-place decking method : 1,500 cubic yards (150 truckloads) Finishing concrete: 500 cubic yards (50 truckloads)
Typical Equipment	Major equipment would include a vibratory or impact hammer located on a barge, a diesel tugboat, gasoline utility boats, concrete trucks and pumpers, a lowboy truck for granite delivery, diesel/electric scissors lifts, diesel cherry pickers, electric/liquid gas/diesel forklifts, scaffolding, arc welders with diesel generators, and a variety of small electric tools such drills, routers, and table saws
Duration	10 months for the structural work; an additional 8 to 10 months for surface improvements

Note: South Basin Circulation Improvements include the Embarcadero Plaza, East Bayside Promenade, and South Apron of the Agriculture Building.

2.4.3 Dredging Requirements

The side-loading vessels that would be used at Gates A, F, and G (see Section 2.3.5 for more information on the vessel characteristics) would require a depth of 10 feet below MLLW on the approach and in the berthing area. The floats would require water depth of 12 feet below MLLW. The most recent available bathymetry survey data for the Ferry Terminal basin shows that existing depths in the berthing areas range from between 8 and 10 feet below MLLW at Gates F and G, and between 7 and 10 feet below MLLW at Gate A (Moffatt & Nichol, 2012).

The expected dredging volumes are presented in Table 2-10. These estimates are based on dredging the approach areas to 12 feet below MLLW for Gates A, F, and G, and over-dredging by 2 feet, which is the industry practice. Figure 2-8 depicts the area that would be dredged for each gate. The dredging for Gates A would take approximately 1 month, and the dredging for Gates F and G would take approximately 2 months.

Table 2-10
Summary of Construction Methods for Dredging Activities

Dredging Element	Summary
Gate A	0.9 acre/9,000 cubic yards of dredging required
Gate F	1.29 acres/9,500 to 11,000 cubic yards of dredging required
Gate G	1.73 acres/11,000 to 13,000 cubic yards of dredging required
Total for Gates A, F, and G	3.92 acres/29,500 to 33,000 cubic yards
Staging	On barges
Typical Equipment	Clamshell dredge on barge; disposal barge; survey boat
Duration	1 month for Gate A; 2 months for Gates F and G

Dredging and disposal of dredged materials would be conducted in cooperation with the San Francisco Dredged Material Management Office, to comply with the requirements of the Dredging – Dredge Material Reuse/Disposal permit that would be issued by the U.S. Army Corps of Engineers. Requirements would include development of a sampling plan, sediment characterization, a sediment removal plan, and disposal in accordance with the Long-Term Management Strategy for San Francisco Bay to ensure beneficial reuse, as appropriate.

2.4.4 Construction Utility Requirements

Night work is not anticipated, so minimal lighting, if any, would be required. Onsite power could be provided by the Port during construction. Generators for equipment operation could also be required, and would be located on the construction barges and on the landside structural improvements when completed.

2.4.5 Construction Staging

Figure 2-9 depicts the areas within the project area that would be affected by construction activities, including demolition, construction of project elements, material and equipment storage, and staging. Construction staging would be located within areas managed by the Port that are not within other lease boundaries.

As discussed above, due to the lack of potential landside construction staging and access areas in the Ferry Building area, the majority of demolition and construction would be staged and conducted from barges. The barges would be approximately 60 feet by 130 feet, and the number of barges required would vary by the stage of construction, as described for each element below. Two types of barges would be used: equipment barges and material barges. The equipment barges are outfitted with large cranes and other types of equipment (e.g., clamshell dredge, excavator) that operate from the barge. The barges are towed into place by diesel powered tugboats and anchored where needed. Tugboats would also be required to move the barge as necessary during construction. Barges and construction equipment to be used in the water would be sourced from areas within San Francisco Bay.

Once completed, the Gate A access pier and the Embarcadero Plaza would be used for staging of equipment, materials, and supplies during construction of the following project elements:

- Extending utilities;
- Placement of gate and canopy structures, including cladding of gate and glazing of canopy;
- Topping slab; and
- Placement of ticket machines, railings, lighting, signage, and bioretention planters.

Two or three vehicle parking spaces could be provided on site during construction within the areas shown on Figure 2-9 as the construction zone. No other landside staging area would be required for project demolition or construction.

For concrete and other materials delivered by truck, the curbside areas between the Ferry Building and Pier 1 and between the Ferry Building and the Agriculture Building would be used.

The existing water transit and retail/commercial services at the Ferry Terminal would remain open and operational during construction. Ingress and egress to the existing gates and businesses would be maintained during construction, along with access to other facilities on the Ferry Plaza. Appropriate wayfinding signage would be posted as necessary. Existing vehicular access for the fire lane would be maintained. Additionally, BART's evacuation route on the Ferry Plaza would be maintained during construction. The construction zone would not block or prevent passage along The Embarcadero. A detailed construction staging plan would be developed during final design that would delineate clear routes for existing water transit passengers and users of the Ferry Building.

2.4.6 General Construction Schedule

Construction would be conducted in accordance with CCSF Construction Ordinance, 7:00 AM to 8:00 PM, 7 days a week. The construction schedule would be dependent on several variables: what type of piles and construction methods would be used for the decking (i.e., cast in place or precast); and the schedule under which the new services become operational. For the purposes of this Draft EIS/EIR, it is assumed that improvements in the North Basin could be constructed simultaneously with the improvements in the South Basin. Refer to Section 2.3.6 for more detail on project phasing considerations.

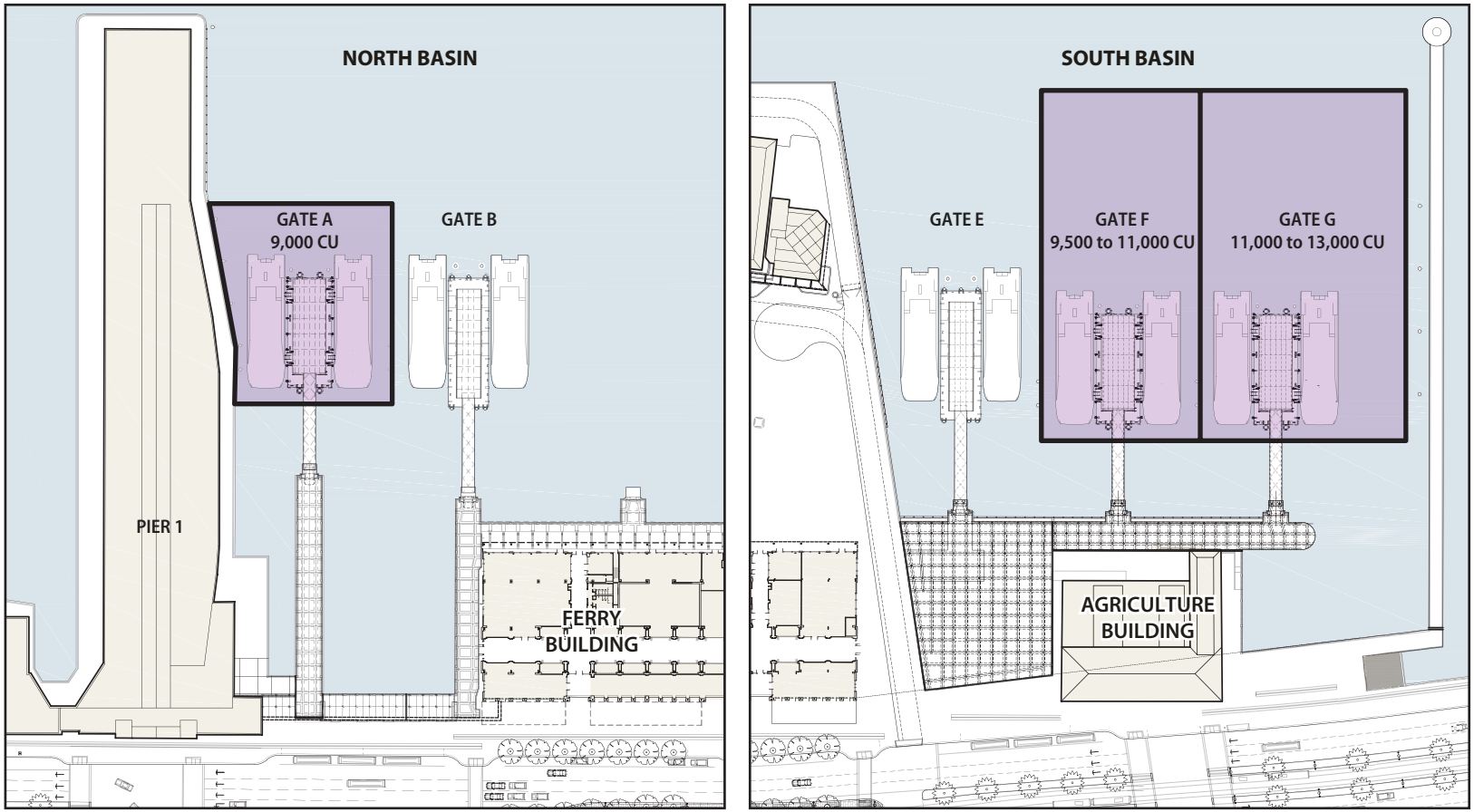
The improvements in the North Basin could be constructed within 14 months, as shown on Figure 2-10; many of the construction activities (dredging, Gate A Pier construction, Gate A berthing structure installation, Marginal Wharf Repair, Gate A and Gate B canopy installation, and site finishing work) would overlap. In the South Basin, construction could be completed within 24 months. Several phases of the South Basin construction (demolition, dredging, construction of Embarcadero Plaza, South Apron of the Agriculture Building improvements, construction of the East Bayside Promenade, installation of the berthing structures, installation of the canopies, and site finishing work) would also overlap.

2.4.7 Construction Deliveries and Staffing

Materials and equipment would be delivered both by barge and by truck. Piles, precast decking, steel frame access gates, steel canopies, steel beams, and temporary falsework would also be delivered to the site by barge. Trucks would be required for delivery of concrete, timber framing and falsework, granite paving, glazing for canopies, lighting, signage, ticket machines, benches, plumbing, and other supplies.

The majority of deliveries by truck would be for delivery of the concrete. In the North Basin, approximately 77 trucks would be required for concrete delivery, and 200 truckloads of concrete would be needed for South Basin construction activities.

The workforce required on site for demolition and construction activities would vary depending on the type of activity. In addition, supervisory staff may only visit the site periodically or briefly. The



Dredge Area for Gates A, F and G
Total Area = 29,500 to 33,000 cy

N

0 50 100 150 FEET

AREAS REQUIRING DREDGING DURING CONSTRUCTION

Downtown San Francisco
Ferry Terminal Expansion Project
28067812 San Francisco, California

FIGURE 2-8

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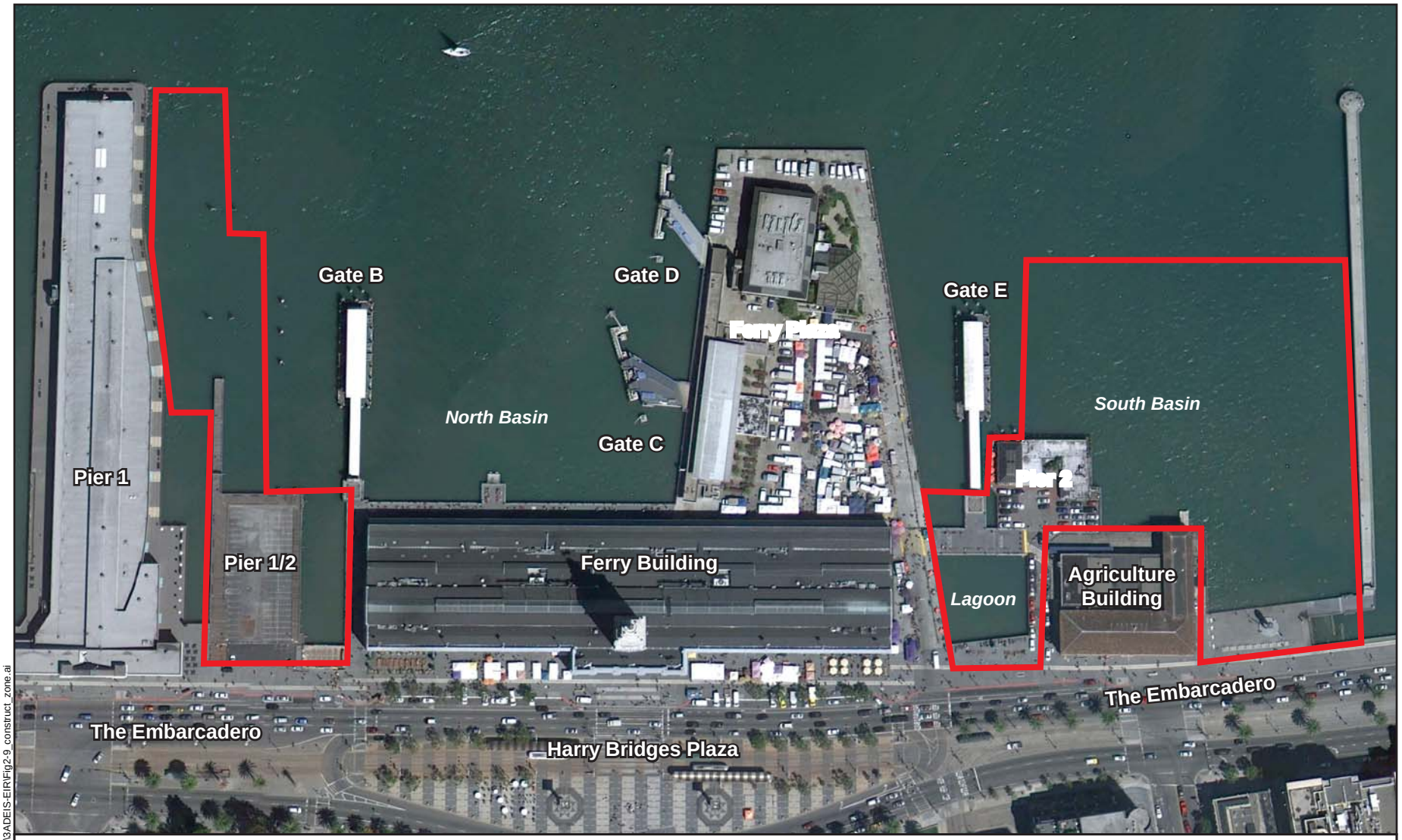
Source: Roma Design Group, et al, 2012



Construction Zone

Note: The America's Cup project has removed all of Pier 1/2 and will remove the building located on Pier 2 prior to project construction.

N

0 90 180 FEET

CONSTRUCTION ZONE WITHIN THE PROJECT AREA

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28067812 San Francisco, California

FIGURE 2-9

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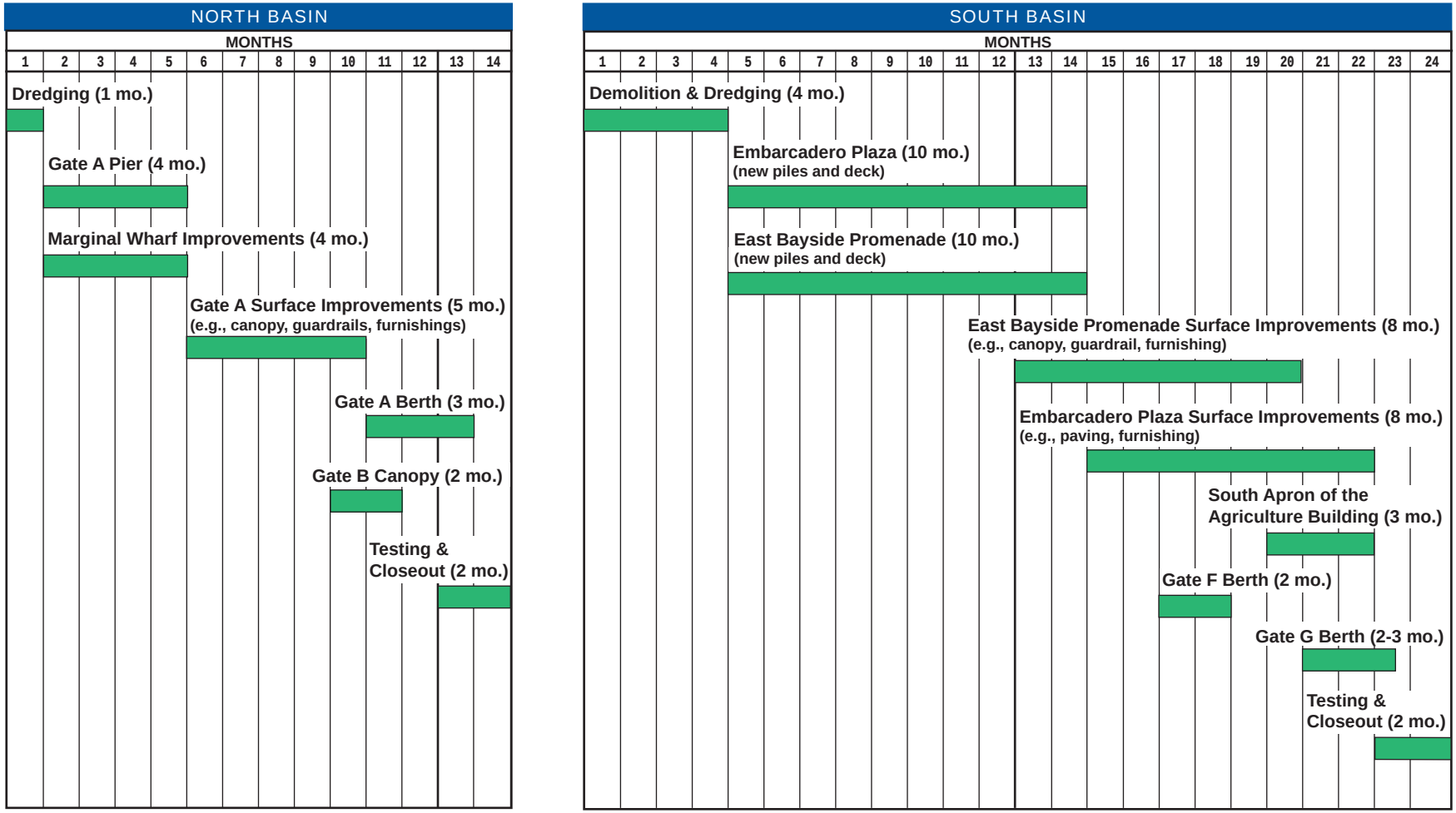
Source: Roma Design Group, et al, 2010, Google Earth Pro 2010.



ESTIMATED CONSTRUCTION SCHEDULE

Downtown San Francisco
Ferry Terminal Expansion Project
28067812 San Francisco, California

FIGURE 2-10

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maximum workforce required for any phase of work would be approximately 25 people; some phases are likely to require far fewer people on site (e.g., dredging would require 4 to 6 people). It is assumed that the majority of the workforce would arrive by transit or car pool. Two or three parking spaces could be provided on site in areas within the construction zone depicted on Figure 2-9. Others arriving via vehicle would use nearby parking garages and lots.

2.5 CAPITAL AND OPERATING COSTS

Capital cost estimates for the proposed project were developed by ROMA Design Group. The cost estimates reflect the conceptual nature of the engineering and should not be construed as an accurate estimate of capital costs. Additional costs for anticipated project management, construction management, legal, and other miscellaneous costs were projected by WETA. Total capital costs for the proposed project are estimated to be approximately $120 million to design and construct both the North and South Basin improvements proposed under the Action Alternative. This estimate does not include costs for mitigation measures that may arise from the environmental review and permitting process.

The proposed project would be funded with a combination of local, regional, state, and federal sources. To date, WETA has secured $37,950,000 through Regional Measure 2, Proposition 1B, and federal fund sources to design and construct the proposed North Basin improvements. WETA plans to secure the $82,999,000 in additional funds required to complete the project, including design and construction of the proposed South Basin improvements, from the following sources: through Proposition 1B California Transit Security Grant Program – Regional Public Waterborne Transit funds; Federal Section 5309 Bus and Bus Facilities Allocations – Ferry Boat, and other potential future federal sources. Table 2-11 presents the conceptual cost estimate and funding sources by project phase.

Operating and maintenance costs for facilities licensed by WETA are currently funded through docking fees transferred from WETA to the Port of San Francisco for use of the Ferry Terminal per a licensing agreement. Recent annual docking fees for the Alameda-Oakland service were under $50,000 annually. Allocation of future operations and maintenance costs, including capital rehabilitation, are subject to future agreement between WETA and the Port of San Francisco setting forth terms and conditions of lease/licensing agreement for new facilities. Current operating and maintenance costs for WETA facilities at the Ferry Terminal are funded with Regional Measure 2 appropriations, farebox revenue, and other local funding sources available to support existing WETA services. Any additional operating and maintenance costs required to support the WETA expansion project would be funded through similar funding sources available to future WETA services operating at the Ferry Terminal.

2.6 AGENCY APPROVALS REQUIRED

FTA, as the federal lead agency under NEPA, would issue the Record of Decision for the project as the final project approval in the NEPA process. Similarly, WETA, as the local lead agency subject to CEQA, would certify the EIR as the final project approval in the CEQA process. Additionally, other agencies have jurisdiction over the project area or resources that the project could potentially impact. The following major permits and approvals would also be required:

- Port/CCSF – Approval of WETA's long-term lease for modifications to existing and construction of new facilities within their jurisdiction. Final design of the project would also go through the Port's design review process. The Waterfront Design Advisory Committee is responsible for design and architectural review of major Port projects. This design review process would also be coordinated with other agencies with jurisdiction over and expertise in areas along the waterfront, including BCDC and, given the historic resources within the project area, the San Francisco Historic Preservation Commission. The public is invited to participate in the design review process. The Port would also issue the building permit.

Table 2-11
Capital Cost Estimates and Funding Sources

	Budget	Funding (Secured)			Funding (Planned)		Total
		Regional Measure 2	Proposition 1B	Federal	Proposition 1B	Federal	
Environmental/Conceptual Design	$3,037,000		537,000	2,500,000			$3,037,000
Terminal Design – North Basin	$3,274,000		3,274,000				$3,274,000
Construction – North Basin	$31,137,000	18,450,000	12,687,000				$31,137,000
Terminal Design – South Basin	$4,055,000		502,000		3,553,000		$4,055,000
Construction – South Basin	$79,446,00				39,446,000	40,000,000	$79,446,000
Total	**$120,949,000**	18,450,000	17,000,000	2,500,000	42,999,000	40,000,000	$120,949,000

Notes:
SFCTA = San Francisco County Transportation Authority

- BCDC – Major Permit and Federal Consistency Certification. BCDC also has a design review process that is conducted jointly with the Port.
- California State Lands Commission – Approval of required dredging; approval is coordinated with the Port.
- San Francisco Regional Water Quality Control Board – Clean Water Act Section 401 water quality certification for placement of fill into waters of the United States and for approval of dredging.
- State Historic Preservation Office – National Historic Preservation Act Section 106 consultation related to potential impacts to historic resources.
- U.S. Army Corps of Engineers – Clean Water Act Section 404 and Rivers and Harbors Act Section 10 permit for placement of fill into waters of the United States and for approval of dredging.
- U.S. Fish and Wildlife Service and National Marine Fisheries Service – Endangered Species Act Section 7 consultation.
- U.S. Coast Guard – Anchor Waiver pursuant to 33 Code of Federal Regulations 110.224 for permission to anchor outside of designated anchorages.

2.7 ALTERNATIVES CONSIDERED

The CEQA Guidelines (Section 15126.6) require that an EIR "describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects." Every conceivable alternative does not need to be considered, but a reasonable range of potentially feasible alternatives should be considered to foster informed decision making and public participation. The lead agency is responsible for selecting the range of alternatives. CEQA Guidelines also state that if the lead agency deems that an alternative to the location of the project is not feasible, then the reasons for this determination must be clearly described in the EIR (CEQA Guidelines §15126.6[f]).

FTA's NEPA Guidelines also state that "the draft EIS shall evaluate all reasonable alternatives to the action and discuss the reasons why other alternatives, which may have been considered, were eliminated from detailed study" (§ 771.123[c]).

Many alternatives to the Action Alternative were considered through the planning phases for the project. Some of the alternatives considered were evaluated during the planning of Phase I in 1999-2000. Figure 2-11 depicts the vision developed for the Ferry Terminal that was developed in Phase I as a result of substantial evaluation, agency, and public input. WETA considered additional alternatives while developing the preliminary design concept plan for the project. The following sections describe the alternatives that have been previously evaluated.

2.7.1 Alternative Locations

The Ferry Terminal is centrally located and adjacent to the City's Downtown hub of transit services (e.g., Bay Area Rapid Transit and Muni). This is the historic location of water transit service in San Francisco because of its proximity to both employment centers downtown and open water channels in San Francisco Bay. Development of expanded water transit service in another location (i.e., at another pier along the waterfront north or south of the Ferry Terminal) would require substantially more improvements to both the landside (e.g., development of transit connections or shuttle services, demolition/reconstruction of pier sheds) and water side (e.g., more dredging) than are proposed for this project, increasing the potential for environmental impacts. Development and expansion of water transit service at the Ferry Terminal is

consistent with CCSF's and BCDC's vision and plan for waterfront development, and is the culmination of decades of waterfront and transit planning. Therefore, consideration of alternative locations would not meet the purpose and need for the project and would not be considered feasible.

2.7.2 Berthing Facility Design Options

In Phase I, the Port considered two different berthing facility designs: 1) fixed, currently used by Golden Gate Ferry and requiring hydraulic ramps to adjust for tidal variation, and 2) floating, requiring a gangway and float that can more readily accommodate the diversity of vessels and adjust for tidal variations. The Port selected the floating configuration to provide greater flexibility in accommodating tidal variation and seawall height, and interfacing with the diverse types of vessels in the Bay Area fleet. WETA is also using the floating configuration at its other facilities. The floating berthing structure better meets the project objectives and reduces the environmental impacts associated with hydraulic ramps (e.g., use of energy and hydraulic fluids).

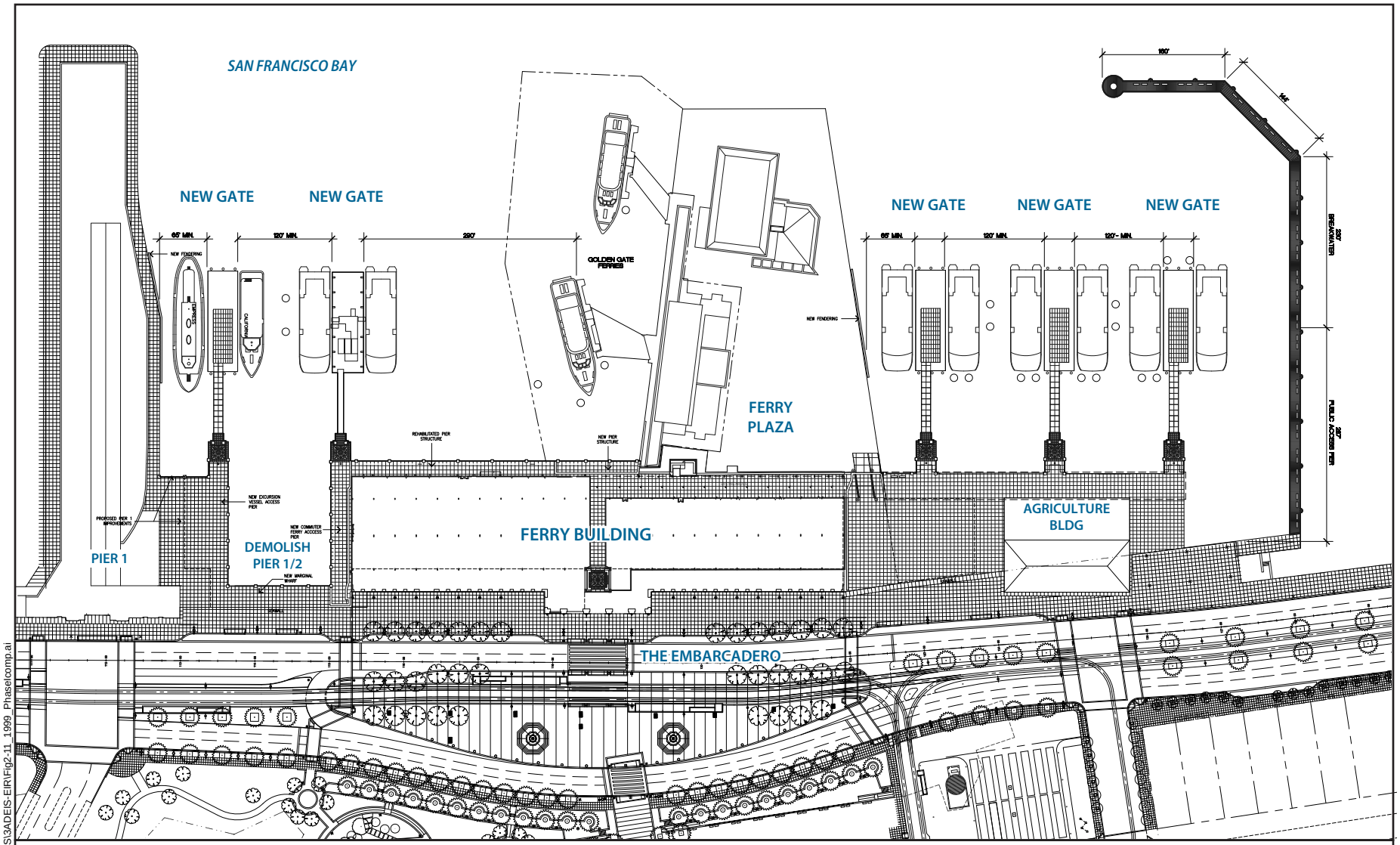
During the initial planning phases of the project, WETA considered an additional phase, Phase III, of improvements at the Ferry Terminal. Phase III, referred to as the Bow Loading Design Option, was described in the materials presented to the public during the scoping process for the EIS/EIR. Phase III involved the replacement of Gate E with a berthing facility that could accommodate two bow loading vessels that would be used for the service to Treasure Island. Phase III would have been implemented in 2030, once the new development on Treasure Island was fully built-out and ridership demand required the use of larger vessels. The bow loading vessels were considered by the Treasure Island Development Authority as one option to serve riders at full build-out. Upon further consideration, and in coordination with the Treasure Island Development Authority, this option was removed from consideration at this time. Future ridership projections, as shown in Table 1-2, can be served with side-loading vessels, as described in Action Alternative. It is considered speculative at this time to include the potential future expansion of water transit service to Treasure Island using bow loading vessels.

2.7.3 Berthing Configuration Options

In Phase I, the Port considered a variety of berthing configurations. Options considered included expanding the gate configuration primarily in the North Basin, rebuilding Pier ½ to provide access to the new berths, and establishing new berths in both the North Basin and South Basin. The Port elected to develop new gates in both the North and South Basins, because it minimized crossover operations of vessels and provided greater flexibility for future water transit service expansion. The concept developed in Phase I included two new gates in the North Basin (Gates A and B) and three new gates in the South Basin (Gates E, F, and G). Gates B and E were constructed in Phase I.

During the initial planning of Phase II, WETA evaluated whether three new gates would be needed to support new and existing services, as was envisioned in Phase I. Based on the projected ridership and operations schedule, WETA confirmed, as described in Section 2.3, that three new gates would be required meet their objectives. The construction of three new gates also provides additional operational flexibility; a limited amount of potential spare berthing capacity to accommodate emergency evacuation, guest, or visiting vessels; layover berthing; and the ability to maintain operations should an existing berth be taken out of service for maintenance or repair.

Use of Gates C and D for WETA's expanded operations was not considered as a viable alternative, because these gates are used by GGT under an agreement with the Port of San Francisco; and Gates C and D do not have adequate capacity to accommodate both GGT's and WETA's services. Additionally, Gates C and D are fixed berthing structures and are not configured for use by WETA's vessels.



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1999 PHASE I PROJECT COMPONENTS CONSIDERED

Downtown San Francisco
Ferry Terminal Expansion Project
28067812 San Francisco, California

NO SCALE

FIGURE 2-11

Source: ROMA, Phase 1 1999 DTFF Expansion; Preliminary Design Concept Plan, 2011

2.7.4 Bus/Taxi/Auto Drop-Off Options

To relieve traffic congestion, the Port has considered a variety of approaches to include additional drop-off areas at the Ferry Building. Options evaluated during Phase I included: 1) expanding the drop-off area in front of the Ferry Building; 2) creating a drop-off area to the north along Pier ½; 3) creating a drop-off area to the south of the Agriculture Building; 4) rebuilding Pier ½ for a drop-off area; 5) filling in the open water area south of the Ferry Building for a drop-off area; and 6) locating bus drop-offs on the Ferry Plaza behind the Ferry Building. None of these options were deemed consistent with the San Francisco Bay Plan. As a result, development of additional drop-off options were not pursued and only curbside drop-off was retained and implemented.

2.7.5 Passenger Amenities – Queuing, Waiting, and Weather Protection Options

The Port conducted passenger and operator surveys and determined that a specialized facility with centralized passenger waiting areas was not desirable, based on the behavior of commuter passengers (who tend queue in front of the gate just before departure), the decentralized on-board ticketing process, and the small size of vessels. Instead, several options were considered in Phase I for a covered arcade along San Francisco Bay, or canopy extensions from the Ferry Building. These options were not implemented in Phase I due to funding limitations at the time.

During planning of Phase II, WETA considered development of passenger boarding and circulation areas that did not include the new deck and pile construction that would cover the existing open water area in the South Basin. This option was removed from consideration because it would not meet several project objectives. Reconstruction of the proposed Embarcadero Plaza as an Essential Facility would provide a critical area for passenger staging and queuing in the event of an emergency evacuation. Additionally, filling the South Basin open water area would provide an area for construction staging, thereby minimizing disruption to the existing Ferry Building area businesses and users. Lastly, the creation of the Embarcadero Plaza would improve passenger circulation in the Ferry Building area, addressing existing circulation constraints that would become more significant as new water transit routes are implemented in the Ferry Building area.

2.7.6 Additional Circulation Areas

Preliminary concepts of Phase II included expansion of the Bayside Promenade from the northeast corner of the Ferry Building to Pier 1, creating a large continuous platform in the North Basin. This option is not necessary to serve passenger queuing and access to the new gates, and would have resulted in a greater amount of fill in San Francisco Bay. Therefore, this option was removed from consideration.

During planning of Phase II, WETA also considered concept design of a longer Gate A Access Pier. This option would have resulted in a greater amount of fill in San Francisco Bay and would not present any appreciable public access or operational benefit related to vessel berthing. Therefore, this option was removed from consideration.

The replacement of the South Apron of the Agriculture Building was also considered during the preliminary design of Phase II. Although replacement of the South Apron of the Agriculture Building will eventually be required due to its condition and low elevation, it was determined that the full replacement of this apron was not required to meet project circulation and emergency transportation needs. Temporary repair of the apron, as described in Section 2.3, allows this area to be used during construction and also to temporarily support passenger circulation. Additional repair work, at this time, is not necessary to support water transit operations in the Ferry Building area.

CHAPTER 3 AFFECTED ENVIRONMENT, CONSEQUENCES, AND MITIGATION

3.1 INTRODUCTION

This chapter describes the existing setting of the project area; the federal, state, and local regulatory framework applicable to implementation of the No Action Alternative and the proposed project; and the impacts associated with the alternatives, including applicable mitigation to reduce potential impacts.

The following resources were considered, but were not addressed in the detailed impact analysis, because the resources were not present in the project area: agricultural lands and forest resources, Section 6(f) resources, and Indian trust assets. The resources discussed in the sections that follow are:

- Transportation and circulation
- Land use and land use planning
- Parklands and recreation
- Section 4(f) resources
- Air quality and global climate change
- Noise and vibration
- Cultural and paleontological resources
- Biological resources
- Aesthetics and visual resources
- Hydrology and water quality
- Hazards and hazardous materials
- Geology, soils, and seismicity
- Energy consumption
- Utilities and public services
- Socioeconomics
- Environmental justice
- Regional growth

Safety and Security is not addressed separately and in detail in this chapter because the proposed project would be located at the existing Downtown San Francisco Ferry Terminal (Ferry Terminal), and would not require new or additional onsite safety and security measures beyond what is described for the project in Chapter 2 (e.g., locked gates, Americans with Disabilities Act-accessible ramps, and lighting of floats and circulation areas). The potential for the project to affect police and fire service is evaluated in Section 3.15, Utilities and Public Services. In addition, a discussion of emergency access is included in Section 3.2, Transportation and Circulation.

As discussed in Chapter 2, this Environmental Impact Statement/Environmental Impact Report (EIS/EIR) evaluates the impacts associated with the facility improvements to the Ferry Terminal that are needed to accommodate the additional Water Emergency Transportation Authority (WETA) ridership and vessel arrivals at the Ferry Terminal. The impacts associated with the facility improvements are addressed in each section under the Direct Impacts section. Because the facility improvements would allow vessel traffic to increase at the Ferry Terminal, impacts associated with the increase in vessel and passenger traffic at the Ferry Terminal are addressed in each section under Indirect Impacts.

The impacts associated with WETA's planned expansion of water transit routes and services were analyzed in WETA's Implementation and Operations Plan and the Program EIR for the Implementation and Operations Plan (WETA 2003b; WETA, 2003a), and therefore are not assessed in this EIS/EIR. This EIS/EIR analyzes—at a project level—the site-specific impacts of improvements to the Ferry Terminal, and impacts associated with the increase in vessels while they use and/or are docked at the Ferry Terminal.

For each resource section, the analysis is presented as follows:

1. Under "Introduction to the Analysis," a brief summary is provided of the project's impacts, and of any mitigation measures recommended to reduce impacts.

2. Under "Affected Environment," the existing environmental setting is described, followed by the regulatory setting for the project study area and project area. For some resource areas, a study area has been defined and considered in the analysis that is larger than the project area. The study area, if applicable, is defined in each section, and varies based on the resource being considered.

3. Under "Impact Evaluation," there is a discussion of the scope considered in the analysis; the approach to the analysis; and those areas where neither alternative would have an impact, and which are therefore not discussed in more detail in that section. Direct, indirect, construction, and cumulative impacts are then analyzed.

4. Under "Mitigation Measures," a full description is provided of the mitigation measures that are recommended or required to reduce project impacts for that resource area.

This EIS/EIR has been prepared pursuant to the requirements of both the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA). The differences between the guidelines for CEQA and NEPA have been captured in this EIS/EIR. For CEQA, the checklist (Appendix G of the CEQA guidelines) that describes thresholds for determining significance for environmental topics was used. However, because this EIS/EIR is a combined CEQA and NEPA document, and since CEQA and NEPA use the term "significant" differently, consideration has also been given to the definition of significance that is appropriate for NEPA evaluation. Pursuant to the Council on Environmental Quality NEPA regulations (Code of Federal Regulations, Title 40, Sections 1500-1508), the significance of project effects is evaluated in consideration of the effects' context, intensity, and duration. CEQA also requires identification of and mitigation for significant adverse impacts in an EIR; while under NEPA, measures to avoid, minimize, or mitigate effects are considered for all of the adverse impacts of a project, regardless of significance. Another difference between CEQA and NEPA is that CEQA primarily considers impacts to the physical environmental, while NEPA includes impacts to the human environment, such as socioeconomic impacts and environmental justice.

This EIS/EIR has been prepared in compliance with the more stringent or complete requirements, whether they are federal or state. Where possible, criteria are based on state or federal standards. For example, air quality criteria, or thresholds, are based on the state and federal ambient air quality standards; noise thresholds are likewise based on criteria defined by the Federal Transit Administration. In other cases, such as visual resources, the analysis is based on professional standards.

Direct, indirect, construction, or cumulative impacts were evaluated. Direct impacts are the primary effects that are caused by the project, and occur at the same time and place. For the proposed project, direct impacts would be the result of development of the physical facility improvements. Indirect impacts are secondary effects that are reasonably foreseeable and caused by the project, but occur at a different time or place. For the proposed project, the facility improvements would facilitate an increase in vessel and passenger use of the Ferry Terminal area; these effects are described as indirect impacts. Temporary construction impacts are those that would occur only during construction of the project, and would cease when the project enters into the operation phase. Cumulative impacts occur when two or more individual effects that, when considered together, are considerable; or that compound or increase other environmental impacts (see below for further discussion of cumulative projects).

Impacts analyzed pursuant to CEQA have been classified as having no impact, a less-than-significant impact, a less-than-significant impact with mitigation, or a potentially significant impact. Impacts analyzed pursuant to NEPA have been classified as adverse or beneficial, and in terms of their context,

intensity, and duration. Context refers to the geographic area (spatial extent) of impact, which varies with the physical setting of the activity and the nature of the resource being analyzed. Intensity refers to the severity of the impact; evaluation of the intensity of an impact considers the sensitivity of the resource, and other factors.

For impacts determined under NEPA to be adverse, avoidance or mitigation measures are identified to reduce the project's impacts. Similarly, for the CEQA analysis, mitigation was identified to reduce an impact to less than significant. Where mitigation would not reduce an impact to less than significant, the impact was identified as significant and unavoidable.

The discussion of cumulative impacts provides an analysis of cumulative impacts of the project, taken together with other past, present, and reasonably foreseeable future projects producing related impacts. The goal of this analysis is twofold: first, to determine whether the overall long-term impacts of all such projects would be cumulatively significant; and second, to determine whether the project itself would cause a "cumulatively considerable" incremental contribution to any such cumulatively significant impacts. To determine whether the overall long-term impacts of all such projects would be cumulatively significant, the analysis generally considers: (1) the area in which effects of the proposed project will be felt; (2) the impacts from the proposed project that are expected in the area; (3) other past, proposed, and reasonably foreseeable projects that have had or are expected to have impacts in the same area; (4) the impacts or expected impacts from these other projects; and (5) the overall impact that can be expected if the individual impacts from each project are allowed to accumulate. "Cumulative impacts" refers to two or more individual effects that, when considered together, are considerable; or that compound or increase other environmental impacts (CEQA Section 15355). Cumulative impacts can result from individually minor but collectively significant impacts taking place over time (40 Code of Federal Regulations 1508.7). If the analysis determines that there is the potential for the proposed project, taken together with other past, present, and reasonable foreseeable future projects, to result in a significant or adverse cumulative impact, the analysis then determines whether the project's incremental contribution to any significant cumulative impact is itself significant (i.e., "cumulatively considerable").

Table 3.1-1 and Figure 3.1-1 illustrate the other past, present, and reasonably foreseeable projects considered in the cumulative analysis for the proposed project. This list includes projects that are likely to result in similar impacts as the proposed project. The list of projects generally includes those in close proximity to the proposed project area (i.e., those which could result in overlapping impacts, such as transportation and circulation; land use and land use planning; parklands and recreation; noise and vibration; aesthetics and visual resources; or utilities and public services), or other projects along San Francisco Bay that could result in overlapping impacts to resources such as biological resources, hydrology, and water quality. Where applicable for specific resource areas, additional projects or other methods for assessing cumulative impacts may have been considered, as described and noted in that section (e.g., transportation and circulation and air quality).

Additional information on each project can be obtained from the source cited in the table.

Table 3.1-1
Reasonably Foreseeable Projects Considered in the Cumulative Impact Analysis

Project Number	Project Name/Location	Project Summary	Project Date	Source
1	America's Cup Project	A series of international sailing events to be hosted by the City and County of San Francisco, will take place primarily along the northeastern waterfront of San Francisco. Improvements would be located along the waterfront with major components of upgrades located at: Pier 80, Piers 32-36 water basin, Piers 30-32, Seawall Lot 330, Pier 26, Pier 28, Pier 19, Pier 19½, Pier 23, and Piers 19½–27. Additionally, as part of the America's Cup Project, within the project area for the WETA's proposed project, Pier ½ has been demolished; and the restaurant located at Pier 2 will be relocated, and the building demolished.	Construction 2012 to 2013. Events to be held 2012 and 2013.	San Francisco Planning Department NOA/DEIR
2	Port of San Francisco Maintenance Dredging	The Port of San Francisco has a permit from the U.S. Army Corps of Engineers for ongoing dredging activities. From 2011 to 2015, it is anticipated that dredging would be conducted at the Hyde Street Harbor, Piers 35, 27, 80A, 80B, 80C, 80D, 92, 94, and 96; and the Islais Creek Channel and Approach.	Ongoing as needed.	Port of San Francisco
3	Muni Streetcar F-Line Extension	Extension of the F-Market and Wharves Line (F-line) from Fisherman's Wharf through the San Francisco Maritime National Historical Park and the Golden Gate National Recreation Area's Fort Mason.	DEIS released March 18, 2011.	National Park Service
4	San Francisco/ Oakland Bay Bridge Seismic Safety Projects	Seismic improvements to the San Francisco Bay Bridge, including construction of a new approach and seismic improvements to the western span of the bridge, reconstruction of the 2-mile-long eastern span, and a new transition structure on Yerba Buena Island, among other improvements.	The estimated date opening the new bridge to traffic in both directions is 2013.	Caltrans East Span Seismic Safety Project
5	Piers 31 to 33 Alcatraz Landing Improvements	10,000 square feet (sf) of commercial retail uses. Improvements and alterations to existing facilities to support existing water transit service under a contract with the National Park Service to Alcatraz Island National Park.	In the environmental review process.	Port of San Francisco Waterfront Design BCDC Review
6	Pier 27 Cruise Ship Terminal Project	James R. Herman Cruise Terminal and Northeast Wharf Plaza (Cruise Terminal) is planned to be located primarily along the northeastern waterfront of San Francisco.	Anticipated completion of construction by 2014.	San Francisco Port Department
7	Pier 15 to 17 Exploratorium Relocation	Relocation of the Exploratorium from the Palace of Fine Arts to Piers 15 and 17 on The Embarcadero at Green Street.	Under construction; completion expected 2013.	Port of San Francisco Fact Sheet

Table 3.1-1
Reasonably Foreseeable Projects Considered in the Cumulative Impact Analysis

Project Number	Project Name/Location	Project Summary	Project Date	Source
8	Chinatown Broadway Street Design	The Chinatown Broadway Street Design project will improve pedestrian conditions, and develop a design plan.	Currently Under Construction.	City of San Francisco Project Page
9	717 Battery Street	Construction of a private social club. This four-story building will include a full basement containing a fitness club, spa, and a wine cellar room; a 1st floor commercial kitchen and restaurant; a 2nd floor bar with parlor rooms and library; 3rd and 4th floor hotel rooms; and an outdoor spa on the roof.	Construction anticipated to be completed in 2013..	San Francisco Planning Department NOA/MND
10	8 Washington Street	165 residential units, 12,800 sf of institutional uses, 29,100 sf of commercial space, 420 parking spaces. Another component of the project is development of an existing 27,937-sf parking lot for restaurant/retail and parking. Demolition of the existing Golden Gateway Tennis and Swim Club and construction of two new mixed-use buildings and outdoor health club facilities with tennis courts and pool would also occur.	In CEQA review process.	Project Website Proposal
11	Golden Gate Transit Ferry Terminal Improvements	Accessibility upgrades to Golden Gate Transit's Gates (Gate C and D) at the Downtown San Francisco Ferry Terminal. Improvements are expected to include reconfiguring of the existing ramps. The project is not anticipated to result in a change in service frequency or volume.	TBD.	Federal Transit Administration
12	Embarcadero Pedestrian Signage and Map Program	Installation of pedestrian signage and maps along The Embarcadero.	Currently underway.	Port of San Francisco
13	Agriculture Building Rehabilitation and Seismic Upgrades	Rehabilitation and seismic upgrades to the existing Agriculture Building, which may include the following uses: support for expanded water transit services, restaurant, retail, and office.	No specific plans are in place for this project. The Agriculture Building is in the project area, but the Downtown San Francisco Ferry Terminal Expansion Project would not preclude rehabilitation of the Agricultural Building.	San Francisco Planning [Part of Northeastern waterfront area plan]
14	Pier 22½ Fireboat Station Expansion or Relocation	Fire Station 35 at Pier 22½ would be expanded at Pier 22½ or Piers 30-32. The historic fire house would remain, and its new use is still to be determined.	TBD.	Port of San Francisco
15	350 Mission Street	Demolition of an existing four-story building at 350 Mission Street and construction of a 24-story, ~375-foot-tall (plus mechanical space) tower containing ~356,000 sf of office space, 6,600 sf of restaurant and retail space, and 6,960 sf of public open space. Retail and restaurant spaces would include a retail store and a coffee bar/café on the ground floor, and a restaurant and conference space on the mezzanine. A 40-foot-wide driveway on Fremont Street would provide access to two loading and two	FEIR stated project construction would take approximately 22 months, and occupancy is anticipated in late 2012. Project not yet initiated.	Project Website

Table 3.1-1
Reasonably Foreseeable Projects Considered in the Cumulative Impact Analysis

Project Number	Project Name/Location	Project Summary	Project Date	Source
		service parking spaces on the ground floor, and 61 parking spaces and 64 bike parking spaces in three subgrade levels.		
16	Transbay Transit Center	Project involves construction of a temporary transit terminal; demolition and rebuilding of the Transbay Transit Center and Caltrain's Downtown Extension; and, possibly, connection with the California High-Speed Rail project. The associated Transbay Redevelopment Plan would transform vacant, state-owned abandoned freeway property in downtown San Francisco into a transit-oriented neighborhood. The buildings proposed include townhouses, low- and mid-rise buildings, and high-rise towers spaced apart to provide sunlight to proposed new plazas, parks, and widened sidewalks.	Currently under construction. Temporary terminal construction completed in 2010 and currently in operation. Completion of new transit center is anticipated for 2017. Temporary terminal would be demolished once new transit center is complete.	San Francisco Planning Department Project Page
17	Central Subway Extension	The Central Subway would provide rail service on Muni's T-Third light rail line from the intersection of Fourth/King into Union Square and Chinatown. The new, 1.7-mile light-rail line would serve regional destinations, including Chinatown, Union Square, Moscone Convention Center, Yerba Buena, South of Market Area, and AT&T Park, as well as connect to BART and Caltrain.	Construction is underway, and scheduled to be completed by 2018. Operation is anticipated to begin in 2019.	SFMTA Central Subway Overview
18	San Francisco Museum of Modern Art Expansion and Fire Station Relocation and Housing Project	The proposed project includes an approximately 235,000-sf expansion of San Francisco Museum of Modern Art, a private nonprofit modern art museum at 151 Third Street (between Mission and Howard streets); the demolition of two structures to the south (670 Howard Street and 676 Howard Street) to accommodate the expansion; and the relocation of San Francisco Fire Department Station No. 1 from 676 Howard Street to 935 Folsom Street. The existing building at 935 Folsom Street (formerly used for apparel manufacturing and as a commercial laundry) would be demolished; and in addition to construction of a new fire station fronting Folsom Street, the site would be subdivided, and a residential building containing up to 13 units would be constructed on the southern portion of the site fronting Shipley Street.	Received planning department approval on November 10, 2011.	CEQAnet
19	Pier 36 Brannan Street Wharf Project	Construction of a 57,000-sf public park over the water and parallel to the Embarcadero Promenade, consisting of a lawn, walkway with seating, and floating dock for kayaks.	Construction is anticipated to be completed in 2013.	San Francisco Planning Department
20	Pier 40 Historic Shed Rehabilitation	Phase II: rehabilitation work consisting of refurbishment of the historic Pier 40 shed, improved public access, and upgrades to the Pier 40 substructure.	TBD.	See Northeastern Waterfront Plan

Table 3.1-1
Reasonably Foreseeable Projects Considered in the Cumulative Impact Analysis

Project Number	Project Name/Location	Project Summary	Project Date	Source
21	Pier 70 Area	Pier 70 is on San Francisco's Central Waterfront, an approximately 65-acre Port of San Francisco-owned site, generally between 18th and 22nd Streets, east of Illinois Street. In May 2010, following a 3-year community planning process, the Port Commission endorsed the Pier 70 Master Plan that balances sustained ship repair, historic preservation, new waterfront parks, and new development. The plan identifies over 3 million sf of new building potential, and 700,000 sf of buildings to be rehabilitated.	TBD.	Port of San Francisco
22	Blue Greenway Project	Improvements to San Francisco's southern portion of the Bay Trail and the Bay Water Trail, which may include installation of tables, benches, lights, bollards, and bike racks.	Began in 2011.	Port of San Francisco
23	BART Ferry Plaza Physical Barrier Project	Installation of 27 physical barriers on the San Francisco Ferry Building Plaza to protect BART facilities located behind the Ferry Building.	Construction began in October 2012 and is scheduled to be completed by June 2013.	BART
24	Muni E-Embarcadero	Development of a new Muni light rail line. The E-Embarcadero would operate between King Street Station and Fisherman's Wharf, sharing existing tracks and stations.	TBD.	San Francisco Planning Department
25	Water Taxi	Implementation of a new water taxi service that would provide on-call or regularly scheduled point-to-point service via a vessel with a capacity of less than 49 passengers. Potential service locations include Pier 1½, South Beach Harbor Marina, and Hyde Street Harbor.	TBD.	Port of San Francisco

Notes:

BART = Bay Area Rapid Transit
BCDC = Bay Conservation and Development Commission
CEQA = California Environmental Quality Act
DEIR = Draft Environmental Impact Report
DEIS = Draft Environmental Impact Statement
MND = Mitigated Negative Declaration
Muni = San Francisco Municipal Railway
NOA = Notice of Availability
sf = square feet
SFMTA = San Francisco Municipal Transportation Agency
TBD = to be determined
WETA = Water Emergency Transportation Authority

America's Cup Site

Port of San Francisco Maintenance Dredging Site

1 Reasonably Foreseeable Project

Reasonably Foreseeable Project

N

0 0.5 1 Miles

REASONABLY FORESEEABLE PROJECTS CONSIDERED IN THE CUMULATIVE ANALYSIS

Downtown San Francisco
Ferry Terminal Expansion Project
28067812 San Francisco, California

FIGURE 3.1-1

k:\U:\GIS\SF_Ferry_Terminal\Projects\Fig3_1_1_reasonably_foreseeable_projects.mxd 4/24/2013 9:27:26 AM

Source: Basemap, ©2012 Esri, DeLorme, NAVTEQ

3.2 TRANSPORTATION AND CIRCULATION

3.2.1 Introduction to the Analysis

This analysis provides an evaluation of transportation and circulation issues resulting from the implementation of the project. The information is based on current traffic volumes and traffic demand models, and transit ridership data and transit demand models, provided by the Water Emergency Transportation Authority (WETA), the San Francisco Municipal Transportation Agency (SFMTA) and Bay Area Rapid Transit (BART). The transportation analysis for the project was prepared according to the guidelines and methods used by the San Francisco Planning Department to evaluate transportation impacts. A separate, more detailed Transportation Impact Study has been prepared for the San Francisco Planning Department, and is available from WETA. Potential impacts to intersections, transit, pedestrian, and bicycle facilities in the vicinity of the Downtown San Francisco Ferry Terminal (Ferry Terminal) were evaluated following the San Francisco Planning Department's standards, methodologies, and significance criteria.

As detailed in this section, the analysis indicates that an increase in WETA water transit passengers using transit in the study area could significantly and adversely affect San Francisco Municipal Railway (Muni) F Market and Wharves operations. The analysis also indicates that increases in pedestrian circulation in the study area resulting from implementation of the project could result in adverse impacts to two crosswalk levels of service in the study area. Mitigation measures have been identified that would reduce some of these potential impacts; however, impacts would remain adverse and would be considered significant and unavoidable.

3.2.2 Affected Environment

This section describes the existing conditions that were used in the evaluation of the potential transportation impacts associated with the expansion of water transit services at the Ferry Terminal. A separate, more detailed, technical study was also prepared to support this analysis—the Transportation Impact Study, available from WETA—which includes additional detail on the existing transportation and circulation conditions, as well as model runs, as noted below (WETA, 2013).

Project Site Setting

The geographic extent of the study area for the transportation analysis was determined in cooperation with the San Francisco Planning Department. Located at the eastern terminus of Market Street at The Embarcadero, the Ferry Terminal is within Superdistrict 1[1] of the regional travel modeling system. It is also within the City and County of San Francisco's (CCSF's) Northeast Waterfront Area Plan and is part of the San Francisco Ferry Building (Ferry Building) Subarea. The Ferry Building and the project area are the center of the study area for transportation and circulation, which is bounded by Davis Street, Washington Street, The Embarcadero, Howard Street, and Beale Street, as shown on Figure 3.2-1. Serving as the main water transit hub for San Francisco, the Ferry Terminal currently operates with four functional gates. These gates accommodate six water transit routes that provide regular service between the Ferry Terminal and terminals in Alameda, Larkspur, Oakland, Sausalito, Tiburon, and Vallejo. On a typical weekday, more than 10,000 passengers pass through the Ferry Terminal via more than 130 arrivals and departures.

The Ferry Terminal borders the Financial District and South of Market Areas, and is walkable or bikeable from both neighborhoods. The Ferry Building also serves as a market place for a number of businesses. A farmer's market is held on Tuesdays and Thursdays at the western edge of the Ferry Building, along

[1] Superdistricts are based on the travel analysis zones established by the Metropolitan Transportation Commission. Superdistricts are aggregations of the Metropolitan Transportation Commission's 1099 Regional Travel Analysis Zone (1/99).

The Embarcadero. On Saturdays, the farmer's market also extends to the Ferry Plaza east of the Ferry Building.

Roadway Network

CCSF identifies several types of roadway networks, including the Congestion Management Program network, the Metropolitan Transportation System network, Transit Preferential Streets, Better Streets Plan, and Citywide Pedestrian Network. The General Plan provides a detailed description of these regional and local access roadway networks, as they relate to the study area; this description is included in the Transportation Impact Study, and summarized below. The site location and local roadway network are shown on Figure 3.2-1.

Regional Access

Regional vehicular access to the area is provided by Interstate 80 (I-80) to the south. I-80 is an eight-lane freeway that runs in the east-west direction 0.5 mile southeast of the project site. In the vicinity of the project site, I-80 is the major roadway connector between San Francisco and the East Bay via the San Francisco Bay Bridge. Access to the project site from westbound or eastbound I-80 is via Folsom Street or Fremont Street ramps, or the Harrison Street or First Street ramps.

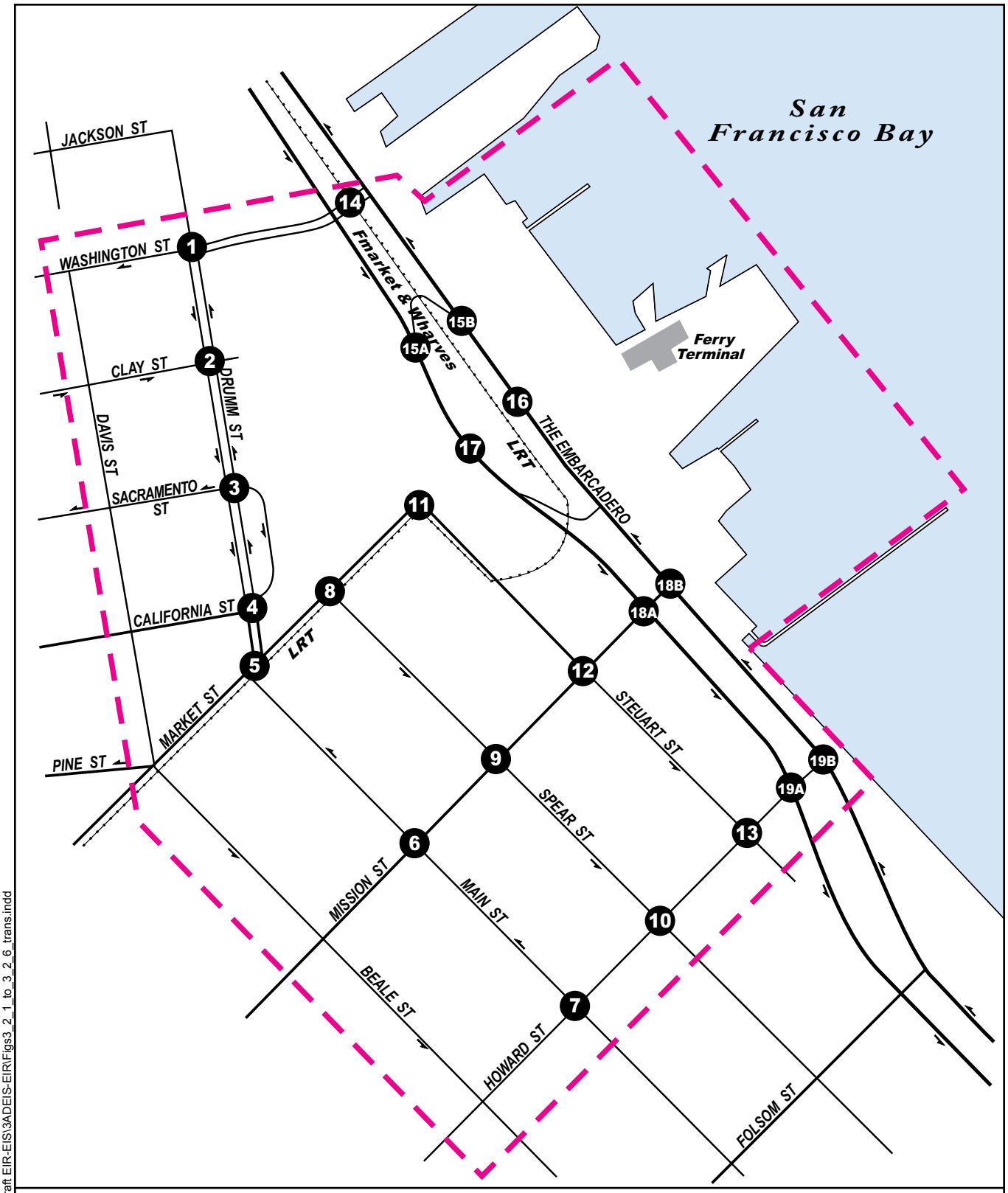
Local Access

The local streets in the project area include Washington Street, Clay Street, Sacramento Street, California Street, Market Street, Mission Street, Howard Street, The Embarcadero, Steuart Street, Spear Street, Main Street, Beale Street, Drumm Street, and Davis Street. These streets generally include sidewalks on both sides, metered parking, and signalized intersections. In addition, many of the study area local streets include bicycle lanes, as described below under Bicycle Conditions.

Intersection Operating Conditions

Weekday AM and PM peak hour intersection turning movement, bicycle, and pedestrian volumes for the 19 study intersections shown on Figure 3.2-1 were collected on Wednesday, May 18, 2011, and Thursday, May 19, 2011. Site visits were conducted during the week of May 16, 2011, to confirm lane geometries and traffic operations at study intersections. Additionally, site visits were used to observe and document existing bicycle and pedestrian movements and facilities. Data collected are available in the Transportation Impact Study (WETA, 2013).

- Intersection 1: Drumm Street and Washington Street
- Intersection 2: Drumm Street and Clay Street
- Intersection 3: Drumm Street and Sacramento Street
- Intersection 4: Drumm Street and California Street
- Intersection 5: Drumm Street/Main Street and Market Street
- Intersection 6: Main Street and Mission Street
- Intersection 7: Main Street and Howard Street
- Intersection 8: Spear Street and Market Street
- Intersection 9: Spear Street and Mission Street
- Intersection 10: Spear Street and Howard Street
- Intersection 11: Steuart Street and Market Street
- Intersection 12: Steuart Street and Mission Street
- Intersection 13: Steuart Street and Howard Street
- Intersection 14: The Embarcadero and Washington Street
- Intersection 15A: The Embarcadero Midblock at the Ferry Building Southbound
- Intersection 15B: The Embarcadero Midblock at the Ferry Building Northbound



Source: DKS Associates, 2012.

00 - Study Intersection & Number
- One-way Street
- Study Area

N

Not to scale

TRANSPORTATION AND CIRCULATION STUDY AREA

Downtown San Francisco
Ferry Terminal Expansion Project
28067812 San Francisco, California

FIGURE 3.2-1

01/24/13 hk/vsa T:\WETA\Draft EIR-EIS\3ADEIS-EIR\Figs3_2_1_to_3_2_6_trans.indd

- Intersection 16: The Embarcadero and Market Street Northbound
- Intersection 17: The Embarcadero and Market Street Southbound
- Intersection 18A: The Embarcadero and Mission Street West
- Intersection 18B: The Embarcadero and Mission Street East
- Intersection 19A: The Embarcadero and Howard Street West
- Intersection 19B: The Embarcadero and Howard Street East

Intersection turning movement counts have been conducted at the 19 study intersections during the weekday AM peak (7:00 to 9:00 AM), and weekday PM peak (4:00 to 6:00 PM). The intersection counts were manually recorded in 15-minute increments.

Lane geometries for each intersection are presented on Figure 3.2-2, and the Existing Conditions traffic volumes are presented on Figure 3.2-3.

Level of Service Definition

A Level of Service (LOS) evaluation is a qualitative description of an intersection performance based on the average delay per vehicle experienced during peak travel periods. LOS can range from "A" representing free-flow conditions, to "F" representing congested conditions with long delays. LOS A through D are considered excellent to satisfactory operating conditions, LOS E undesirable, and LOS F represents unacceptable conditions, at or above capacity. The LOS descriptions considering vehicle delay for signalized intersections are provided in Table 3.2-1, on the following page.

Intersections were evaluated for the weekday AM and PM peak hour of the AM and PM peak period, using the 2000 Highway Capacity Manual operations methodology in the Synchro analysis software. For signalized intersections, this methodology determines the capacity of each lane group approaching the intersection. The LOS is then based on average delay (in seconds per vehicle) for the movements within the intersection. In June 2011, signal timing reports were obtained from SFMTA for all of the study intersections, to ensure that signal phasing and timing used in the analysis represented existing field conditions.

In San Francisco, LOS A through D is considered satisfactory for signalized intersections, and LOS E and F are considered unsatisfactory operating conditions. The AM peak hour is the highest one-hour traffic volume between 7:00 AM and 9:00 AM, while the PM peak hour is the highest 1-hour traffic volume between 4:00 PM and 6:00 PM. LOS calculations were performed at 19 intersections for the weekday PM peak hour.

Table 3.2-2 (following Figures 3.2-2 and 3.2-3) summarizes the results of the intersection LOS for the existing weekday AM and PM Peak-Hour conditions. Based on the LOS results for existing conditions, nearly all of the intersections operate at LOS D or better during both the AM and PM peak hours. Only one intersection operates lower than LOS D. The intersection of Spear Street and Mission Street (No. 9) operates at LOS C in the AM peak hour, and LOS E in the PM peak hour.

The intersection of Steuart Street and Market Street is unsignalized and uncontrolled, and therefore was not analyzed from a quantitative standpoint. Qualitatively speaking, the conflicts between eastbound vehicles turning right, northbound vehicles turning left, and pedestrians using the intersection crosswalks have been detected in the existing field observations, and are described further in Intersection Pedestrian Conditions, below. The intersection does not experience a large number of vehicles, with 212 and 250 total in the respective AM and PM peak hours. Vehicle, bicycle, and transit vehicle speeds through this intersection were observed to be slower due to the 90 degree angle of the two-legged intersection. Conflicts between various modes of transportation were observed, but only occurred on rare occasions due to the slower vehicle speeds and wide crosswalks.

Table 3.2-1
Intersection Level of Service Thresholds

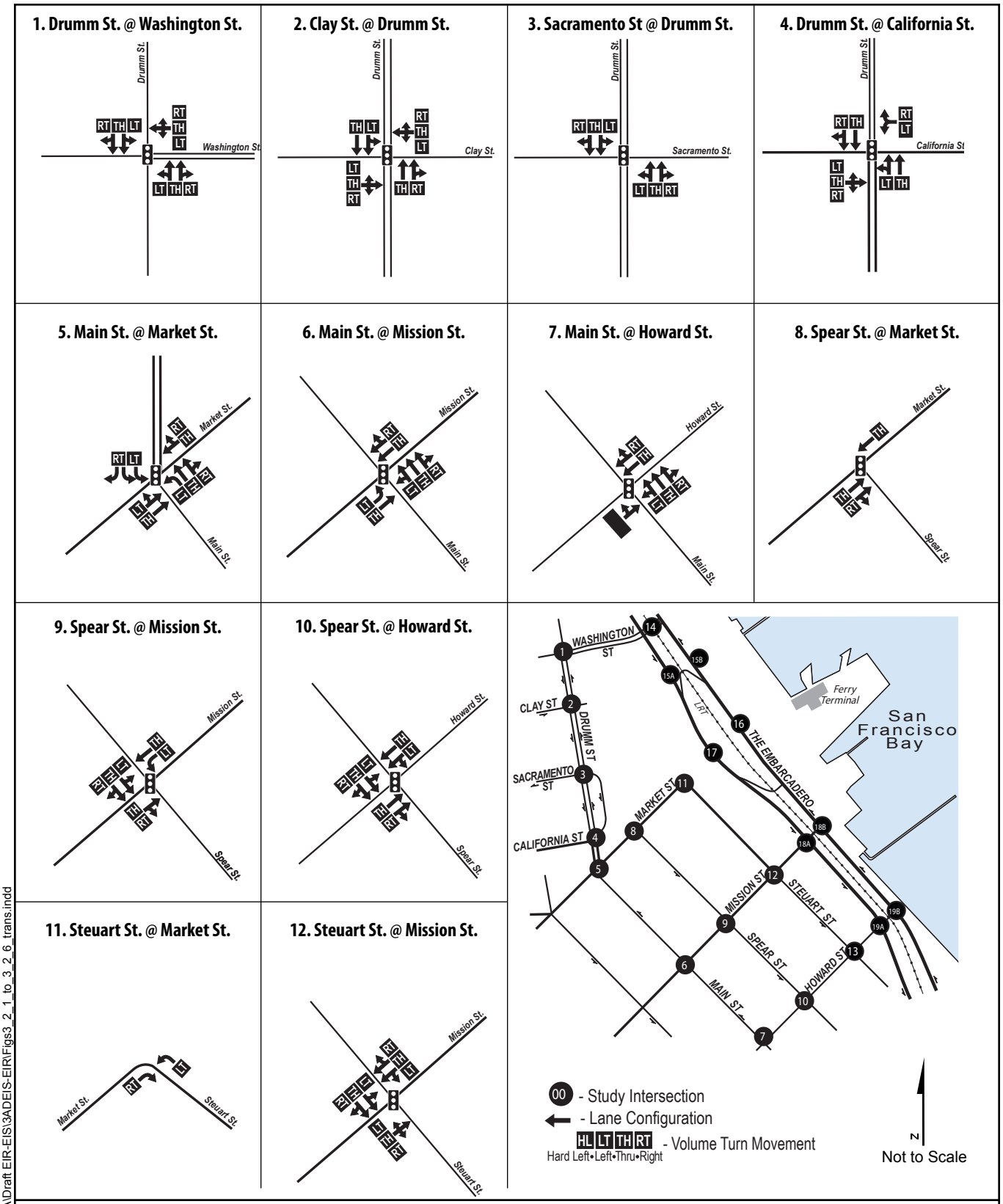
LOS	Vehicle Delay (seconds/vehicle)		Description
	Signalized Intersections[1]	Unsignalized Intersections[2]	
A	Delay ≤ 10.0	Delay ≤ 10.0	Free Flow/Insignificant Delays: No approach phase is fully used and no vehicle waits longer than one red indication.
B	10.0 < Delay ≤ 20.0	10.0 < Delay ≤ 15.0	Stable Operation/Minimal Delays: An occasional approach phase is fully used. Many drivers begin to feel somewhat restricted within platoon of vehicles.
C	20.0 < Delay ≤ 35.0	15.0 < Delay ≤ 25.0	Stable Operation/Acceptable Delays: Major approach phases fully used. Most drivers feel somewhat restricted.
D	35.0 < Delay ≤ 55.0	25.0 < Delay ≤ 35.0	Approaching Unstable/Tolerable Delays: Drivers may have to wait through more than one red signal indication. Queues may develop but dissipate rapidly, without excessive delays.
E	55.0 < Delay ≤ 80.0	35.0 < Delay ≤ 50.0	Unstable Operation/Significant Delays: Volumes at or near capacity. Vehicles may wait through several signal cycles. Long queues from upstream from intersection.
F	Delay > 80.0	Delay > 50.0	Forced Flow/Excessive Delays: Represents jammed conditions. Intersection operates below capacity with low volumes. Queues may block upstream intersections.

Source: TRB, 2000.

Notes:

[1] Control Delay Per Vehicle (seconds per vehicle)
[2] Worst Approach Delay (seconds per vehicle)

< = less than
≤ = less than or equal to
LOS = level of service



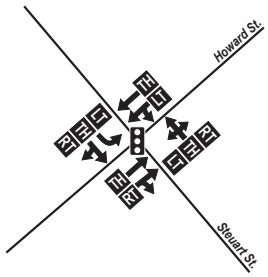
Source: DKS Associates, 2012.

INTERSECTION GEOMETRY

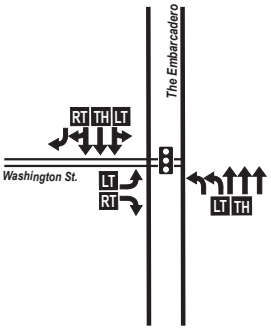
Downtown San Francisco
Ferry Terminal Expansion Project
28067812 San Francisco, California

FIGURE 3.2-2 (SHEET 1 OF 2)

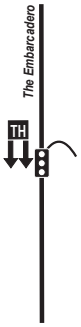
13. Howard St. @ Steuart St.



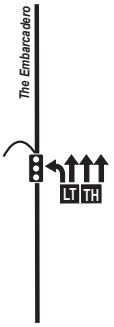
14. The Embarcadero @ Washington St.



15A. The Embarcadero SB Midblock Ferry Building



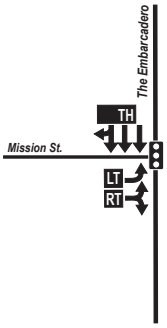
15B. The Embarcadero NB Midblock Ferry Building



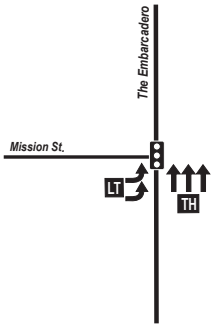
16. Market St. @ The Embarcadero NB

17. Market St. @ The Embarcadero SB

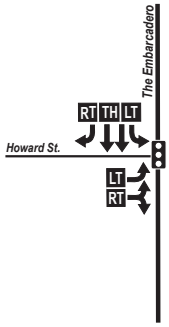
18A. The Embarcadero SB @ Mission St.



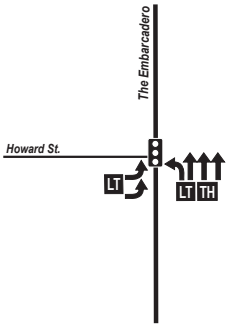
18B. The Embarcadero NB @ Mission St.

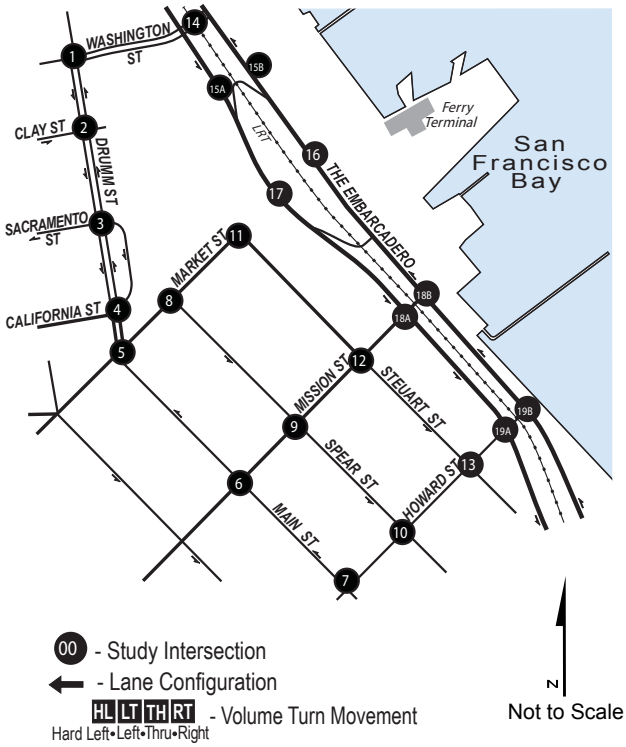


19A. The Embarcadero SB @ Howard St.



19B. The Embarcadero NB @ Howard St.



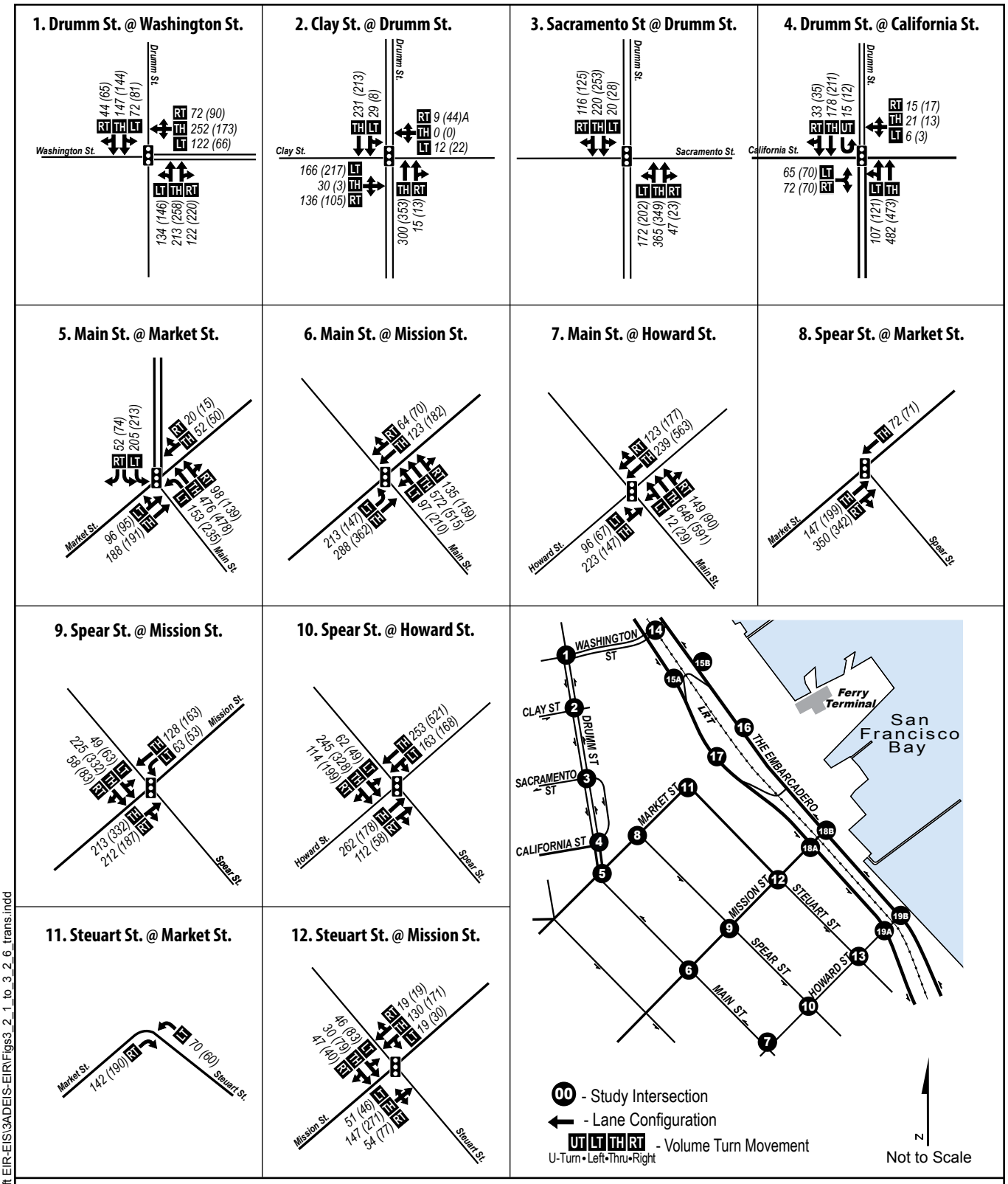


Source: DKS Associates, 2012.

INTERSECTION GEOMETRY

Downtown San Francisco
Ferry Terminal Expansion Project
28067812 San Francisco, California

FIGURE 3.2-2 (SHEET 2 OF 2)



Source: DKS Associates, 2012.

EXISTING CONDITION
PEAK HOUR TRAFFIC VOLUMES

Downtown San Francisco
Ferry Terminal Expansion Project
28067812 San Francisco, California

FIGURE 3.2-3 (SHEET 1 OF 2)

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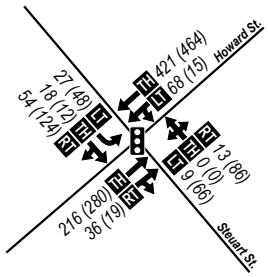
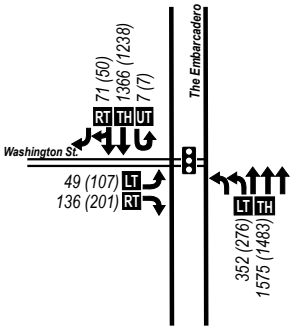
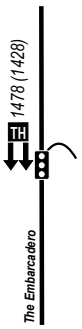
13. Howard St. @ Steuart St.



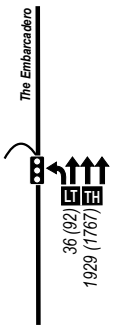
14. The Embarcadero @ Washington St.



15A. The Embarcadero SB Midblock Ferry Building



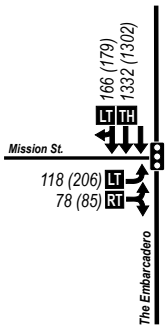
15B. The Embarcadero NB Midblock Ferry Building



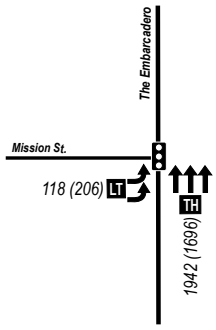
16. Market St. @ The Embarcadero NB

17. Market St. @ The Embarcadero SB

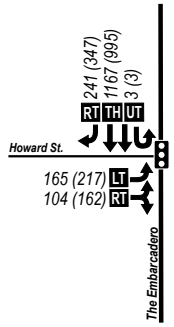
18A. The Embarcadero SB @ Mission St.



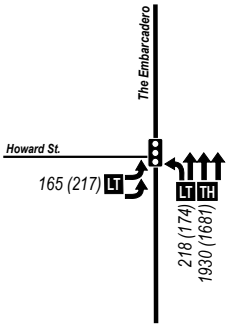
18B. The Embarcadero NB @ Mission St.

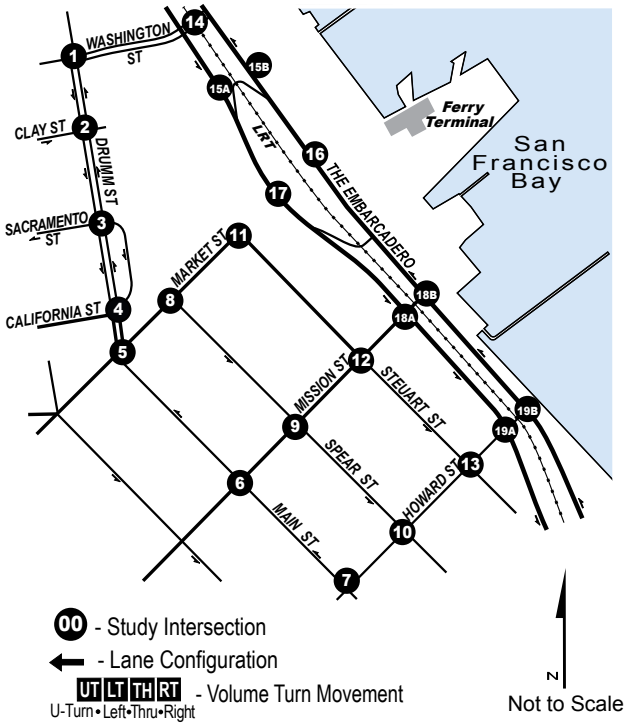


19A. The Embarcadero SB @ Howard St.



19B. The Embarcadero NB @ Howard St.





Source: DKS Associates, 2012.

EXISTING CONDITION
PEAK HOUR TRAFFIC VOLUMES

Downtown San Francisco
Ferry Terminal Expansion Project
28067812 San Francisco, California

FIGURE 3.2-3 (SHEET 2 OF 2)

Table 3.2-2
Existing Conditions Intersection Level of Service

No	Intersection Name	AM Peak Hour		PM Peak Hour	
		Delay[1]	LOS	Delay	LOS
1	Drumm Street and Washington Street	14.1	B	13.9	B
2	Drumm Street and Clay Street	13.1	B	10.7	B
3	Drumm Street and Sacramento Street	12.7	B	20.9	C
4	Drumm Street and California Street	7.4	A	7.3	A
5	Drumm Street/Main Street and Market Street	22.9	C	18.8	B
6	Main Street and Mission Street	20.4	C	14.8	B
7	Main Street and Howard Street	16.2	B	10.2	B
8	Spear Street and Market Street	17.0	B	15.3	B
9	Spear Street and Mission Street	25.2	C	**55.3**	**E**
10	Spear Street and Howard Street	10.0	A	9.0	A
11	Steuart Street and Market Street[2]	—-	—-	—-	—-
12	Steuart Street and Mission Street	5.0	A	14.2	B
13	Steuart Street and Howard Street	8.6	A	9.1	A
14	The Embarcadero and Washington Street	31.5	C	23.3	C
15A-B	The Embarcadero Midblock at the Ferry Building Southbound and Northbound	3.0	A	3.4	A
16	The Embarcadero and Market Street Northbound	0.2	A	0.2	A
17	The Embarcadero and Market Street Southbound	8.6	A	8.8	A
18A-B	The Embarcadero and Mission Street West/East	13.7	B	13.1	B
19A-B	The Embarcadero and Howard Street West/East	35.8	D	26.0	C

Source: DKS Associates, 2012.

Refer to the Transportation Impact Study for additional detail (WETA, 2013).

Notes:

Bolded text indicates that the intersection operates below the City's standards.

[1] Delay is in seconds per vehicle and is based on average stopped delay.

[2] The intersection of Steuart Street and Market Street is unsignalized and does not include vehicular conflicts to calculate delay.

LOS = Level of Service

Transit Network

The project site is well served by public transit, with local and regional transit service within walking distance. Local service is provided by Muni bus and light rail. Nearby regional service to the East Bay and south of San Francisco is provided by Alameda-Contra Costa County Transit Authority (AC Transit), Amtrak, BART, and WETA. Service to and from the South Bay/Peninsula is provided by San Mateo County Transit District (SamTrans) and Caltrain, and service to and from the North Bay is provided by Blue & Gold Fleet, and Golden Gate Transit buses and ferries. The project site is approximately 0.20 mile northeast of the BART/Muni Embarcadero Station.

Figure 3.2-4 shows the local transit network in the study area.

Consistent with the San Francisco Planning Department's guidelines for transit analysis, the ridership and capacity of lines and services is presented for the peak direction of travel. Accordingly, impacts are also analyzed for services in the peak direction of travel (see Section 3.2.3).

San Francisco Municipal Railway Service

Muni provides transit service within San Francisco. Service options include bus (both diesel and electric trolley), light rail (Muni Metro), cable car, and electric streetcar lines. The transit study area includes the following Muni service: 2 Clement, 6 Parnassus, 9 San Bruno, 9L San Bruno Limited, 14 Mission, 14L Mission Limited, 14X Mission Express, 21 Hayes, 30X Marina Express, 31 Balboa, 41 Union, 80X Gateway Express, 81X Caltrain Express, and 82X Levi Plaza Express bus lines as well as the J Church, K Ingleside, L Taraval, M Ocean View, N Judah, and T Third Street light rail lines and the F Market and Wharves streetcar line, which operate along Market Street (SFMTA, 2011).

The fifteen Muni bus lines in the study area are described in detail in Table 3.2-3. All of the Muni bus lines in the study area accommodate bicycles and wheelchairs.

All of the Muni Metro lines are in the study area (F, J, K, L, M, N, and T) and are described in Table 3.2-4. Each line has a below-grade access at the Embarcadero Station at Drumm Street and Market Street, approximately 0.20 mile from the Ferry Terminal.

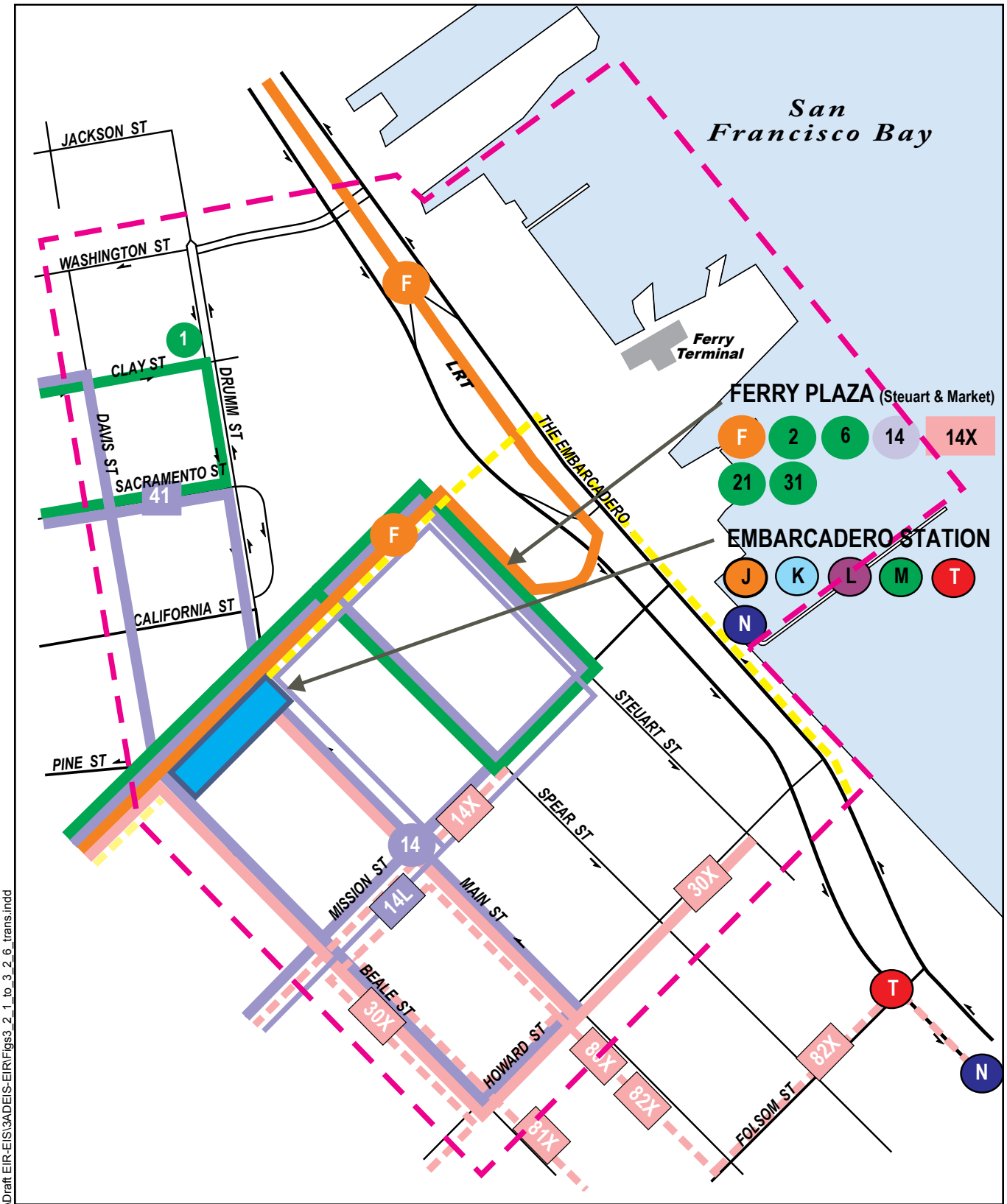
Table 3.2-5 presents the percent utilization for the Muni lines that serve the project area during the AM and PM peak periods. Four Muni lines—the K Ingleside, the L Taraval, the T Third Street, and the N Judah—currently operate with overcrowded conditions (more than 85 percent of capacity used) in the inbound direction during the AM peak hour. Five Muni lines—the J Church, the K Ingleside, the L Taraval, the T Third Street, and the N Judah—currently operate with overcrowded conditions (more than 85 percent of capacity used) in the outbound direction during the PM peak hour. Tables 3.2-3 through 3.2-5 are on the pages following Figure 3.2-4.

Regional Transit Service

Regional transit providers that serve San Francisco are described below and considered in this analysis. Amtrak, BART, Blue & Gold Fleet, Golden Gate Transit, and WETA also all have stops/terminals in the study area. AC Transit, Caltrain, and SamTrans each have stops/terminals in the nearby vicinity of the study area.

Alameda-Contra Costa County Transit District

AC Transit operates bus service in western Alameda and Contra Costa counties, as well as routes to San Francisco and San Mateo counties. AC Transit operates 27 "Transbay" bus routes between the East Bay



Source: DKS Associates, 2012.

- - One-way Street
- - - Study Area

N

Not to scale

STUDY AREA TRANSIT NETWORK

Downtown San Francisco
Ferry Terminal Expansion Project
28067812 San Francisco, California

FIGURE 3.2-4

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Table 3.2-3
Study Area Muni Bus Routes

Muni Bus Line	Hours	Neighborhoods	AM and PM Peak Hour Headways	Nearest Bus Stop in the Study Area
1 California	4:20 AM to 1:45 AM	Richmond and Downtown	3 minutes	Clay Street and Drumm Street
2 Clement	5:00 AM to 8:45 PM	Richmond and Downtown	12 minutes	Market Street and Steuart Street
6 Parnassus	5:20 AM to 1:30 AM	Inner Sunset and Downtown	10 minutes	Market Street and Steuart Street
9 San Bruno	4:55 AM to 12:46 AM	Visitacion Valley and Downtown	12 minutes	Spear Street and Mission Street
9 San Bruno Limited	6:06 AM to 6:23 PM	Visitacion Valley and Downtown	12 minutes	Main Street and Mission Street
14 Mission	24 hours	Daly City and Downtown	7 minutes	Main Street and Mission Street
14 Mission Limited	6:00 AM to 7:00 PM	Daly City and Downtown	9 minutes	Main Street and Mission Street
14X Mission Express	6:24 AM to 8:26 PM 4:10 PM to 6:26 PM	Daly City and Downtown	8 minutes	Steuart Street and Mission Street
21 Hayes	5:39 AM to 1:00 AM	Inner Richmond and Downtown	10 minutes	Steuart Street and Mission Street
30X Marina Express	6:05 AM to 9:39 AM 3:42 PM to 6:53 PM	Marina and Downtown	10 minutes	Spear Street and Howard Street
31 Balboa	4:20 AM to 1:30 AM	Richmond and downtown	12 minutes	Spear Street and Mission Street
41 Union	5:00 AM to 7:46 PM	Marina and Downtown	8 minutes	Main Street and Howard Street
80X Gateway Express	6:45 AM to 9:22 AM	Caltrain Station and Downtown	20 to 40 minutes	Main Street and Market Street
81X Caltrain Express	6:45 AM to 9:22 AM	Caltrain Station and Downtown	20 to 40 minutes	Beale Street and Howard Street
82X Levi Plaza Express	6:04 AM to 9:25 AM 3:44 PM to 6:27 PM	Caltrain Station and Levi Plaza	12 minutes	Main Street and Mission Street

Source: SFMTA, 2011.

Note:

Information current as of June 2011.

Muni = San Francisco Municipal Railway

Table 3.2-4
Study Area Muni Metro Lines

Muni Metro Line	Hours	Neighborhoods	AM and PM Peak Hour Headways
J Church	5:00 AM to 1:00 AM	Balboa Park and Downtown	9 minutes
K Ingleside	5:00 AM to 1:00 AM	Balboa Park and Downtown	9 minutes
L Taraval	5:00 AM to 1:00 AM Owl 1:00 AM to 5:00 AM	San Francisco Zoo	7 minutes
M Ocean View	5:00 AM to 1:00 AM	Balboa Park and Downtown	9 minutes
N Judah	5:00 AM to 1:00 AM Owl 1:00 AM to 5:00 AM	Ocean Beach and Downtown	7 minutes
T Third Street	5:00 AM to 1:00 AM	Castro and Sunnydale	9 minutes
F Market and Wharves[1]	5:00 AM to 1:00 AM	Castro and Fisherman's Warf	6 minutes

Source: SFMTA, 2011.

Notes:

Information current as of June, 2011.

[1] The F Market and Wharves line is a Muni streetcar line rather than a Muni Metro Line.

Muni = San Francisco Municipal Railway

Table 3.2-5
Existing Conditions Muni Demand and Capacity

Route	Direction	Weekday AM Peak Hour Utilization (%)	Weekday PM Peak Hour Utilization (%)
1 California	Howard Street and Main Street (inbound)	74	29
	Geary Boulevard and 33rd Avenue (outbound)	32	62
2 Clement	Market Street and Steuart Street (inbound)	68	43
	Balboa Street and 32nd Avenue (outbound)	41	71
6 Parnassus	Transbay Terminal (inbound)	53	21
	Quintara Street (outbound)	21	52
14 Mission	Transbay Terminal (inbound)	45	35
	Mission Street and San Jose Avenue (outbound)	23	48
14X Mission Express	Transbay Terminal (inbound)	74	61
21 Hayes	Transbay Terminal (inbound)	66	32
	Fulton Street and Eighth Avenue (outbound)	30	63
31 Balboa	Transbay Terminal (inbound)	61	41
	Cabrillo Street and La Playa Street (outbound)	34	53
F Market and Wharves	Jones Street and Beach Street (inbound)	57	44
	17th Street and Castro Street (outbound)	19	76
J Church	Embarcadero (inbound)	78	36
	Balboa Park (outbound)	29	**91**
K Ingleside	Embarcadero (inbound)	**97**	24
	Balboa Park (outbound)	39	**98**
L Taraval	Embarcadero (inbound)	**98**	29
	Wawona Street and 46th Avenue (outbound)	17	**88**
M Ocean View	Embarcadero (inbound)	62	56
	Balboa Park (outbound)	22	72
T Third Street	Bayshore Boulevard (inbound)	**97**	78
	West Portal (outbound)	63	**90**
N Judah	King Street and Fourth Street (inbound)	**93**	51
	Judah Street and La Playa Street (outbound)	34	**96**

Source: SFMTA, 2012.
Notes:
Percent utilization is calculated at the Maximum Load Point.
Bolded numbers indicate lines that operate over 85 percent utilization standard.
Muni = San Francisco Municipal Railway

and the Temporary Transbay Terminal at Howard Street and Main Street. The Temporary Transbay Terminal is approximately 0.5 mile from the project site, and accommodates all Transbay AC Transit buses that stop in San Francisco during the AM and PM commute periods. The Temporary Transbay Terminal is near many major San Francisco Muni routes, either at the terminal or on and near Market Street. Most AC Transit Transbay service is provided only during commute periods, with headways between buses of approximately 15 to 20 minutes, carrying between 1,600 and 2,500 passengers during the peak hour.

Amtrak

California Thruway Motorcoaches operates the Amtrak Thruway coaches. The California Thruway Motorcoaches connect with the Ferry Terminal—stopping in front of the Ferry Terminal—and the Emeryville Amtrak station, which services the California Zephyr, Capitol Corridor, Coast Starlight, and San Joaquin routes.

Bay Area Rapid Transit

BART operates a regional rail transit system between the East Bay (from Pittsburg/Bay Point, Richmond, Dublin/Pleasanton and Fremont) and San Francisco, and between San Mateo County (from Millbrae/SFO) and San Francisco, with 5 lines and 43 stations through San Francisco, Alameda, Contra Costa, and San Mateo counties. The five lines provide regular service between 4:00 AM and midnight, with trains for each line arriving every 15 to 20 minutes. During the weekday PM peak period, headways are generally 5 to 15 minutes for each line. BART also provides additional service in the form of longer trains, shorter headways, and longer operating hours for special events such as New Year's Eve, the Fourth of July, Pride Weekend, and Memorial Day weekend.

Within downtown San Francisco, BART operates underground below Market Street. In the vicinity of the project site, the nearest BART station is the Embarcadero Station, approximately 0.20 mile northeast of the project site. Between October 2011 and December 2011, the average weekday exits at this station were 35,106 riders. Four lines run through the wheelchair-accessible Embarcadero Station. Bikes are allowed on BART, but only outside of the AM and PM peak-direction commute hour, which are approximately between 7:00 AM and 9:00 AM and 4:30 PM and 6:45 PM, respectively.

Blue & Gold Fleet

The Tiburon Ferry is operated by Blue & Gold Fleet and offers services to Tiburon from two locations (Pier 39 and the Ferry Terminal). In addition, they offer multiple boat tours in and around San Francisco Bay. The Tiburon Ferry has a seasonal schedule. It arrives up to four times during each peak period.

Caltrain (Peninsula Corridor Joint Powers Board)

Caltrain provides passenger rail service on the Peninsula between downtown San Francisco and downtown San Jose, with stops in several communities in San Mateo County and Santa Clara County. Within San Francisco, Caltrain terminates at Fourth/King Station in the South of Market neighborhood, which is the nearest station to the project site. The Fourth/King station is accessible via Muni routes from the project site (N Judah and T Third Street). Caltrain service headways during the AM and PM peak periods are between 6 and 23 minutes, depending on the type of service. Caltrain service to San Francisco carries between 575 and 700 passengers during the peak hour.

Golden Gate Transit

The Golden Gate Bridge, Highway, and Transportation District operates Golden Gate Transit, providing bus and water transit service between the North Bay (Marin and Sonoma counties) and San Francisco. Golden Gate Transit operates six basic bus routes serving the Temporary Transbay Terminal, one limited-

stop service route, 17 routes serving the Financial District, and three routes serving the Civic Center. Basic bus routes operate at regular intervals of 15 to 90 minutes, depending on the time and day of the week. The Golden Gate Transit bus service carries approximately 1,500 riders to and from San Francisco during the peak commute hour.

Golden Gate Transit also operates water transit service between Larkspur and Sausalito in the North Bay and the Ferry Terminal during the morning and evening commute periods. The Larkspur service operates at a peak period headway of 30 to 45 minutes. The Sausalito service operates at a peak period headway of 70 minutes. The Golden Gate Transit water transit service currently carries 6,945 per weekday.

San Mateo County Transit District

SamTrans operates bus service in San Mateo County, with select routes providing transit service outside of the County. SamTrans Routes KX, 292, 391, and 397 serve downtown San Francisco providing connections to San Mateo County destinations. In general, SamTrans service to downtown San Francisco operates along Mission Street to the Temporary Transbay Terminal at Howard Street and Beale Street, approximately 0.5 mile from the project site. SamTrans buses to San Francisco carry approximately 2,000 passengers during the peak commute hour. These buses operate with headways between 10 and 60 minutes during the AM and PM peak hours.

Water Emergency Transportation Authority

WETA operates three water transit services from the Ferry Terminal. The Alameda/Oakland Ferry is a publicly funded water transit service that connects the Ferry Terminal to Oakland and Alameda. It arrives at the Ferry Terminal three times during each peak period (i.e., 65-minute headway). Harbor Bay Ferry connects Harbor Bay Isle to San Francisco. It arrives at the Ferry Terminal three times during each peak period (i.e., 60-minute headway). The Baylink Ferry is operated by WETA and connects the Ferry Terminal with Vallejo (i.e., 25- to 60-minute headway). It arrives four times during each peak period. WETA water transit service currently carries 4,490 passengers per weekday. WETA also operates the Baylink Express bus (Route 200) between Vallejo and the Ferry Terminal 7 days a week. Each weekday, the Route 200 Express Bus runs five buses between 5:00 AM and 7:20 AM from Vallejo to San Francisco; and four buses between 4:00 PM and 6:20 PM from San Francisco to Vallejo.

Muni Screenline Analyses

The screenline analysis assumes that there are certain directions of travel within San Francisco that are served by groupings of transit lines. Under the screenline analysis, it is assumed that someone traveling to a certain area of San Francisco will choose one of the transit lines in that direction. Additionally, if the primary transit line is overloaded, the transit rider can choose an alternative transit line that travels across the same screenline. Muni considers four screenlines that divide San Francisco, which are useful in determining the magnitude of transit-related capacity and demand to or from downtown San Francisco to other areas of the City. The four screenlines include trips to and from northeast, northwest, southeast, and southwest San Francisco. Each screenline is divided further into corridors, such as Kearny/Stockton, Geary, Mission, or Haight/Noriega. Capacity utilization is determined for each screenline to determine the availability of space for transit riders.

Table 3.2-6 (on the following page) lists the Muni screenline groupings, and Table 3.2-7 (on the second page following) details the ridership, capacity, and utilization for the screenlines. Ridership for the peak direction of travel[2] and maximum load point for each of the analyzed transit lines has been provided by

[2] For individual transit lines, Muni screenlines, and regional screenlines, the peak direction of travel is considered (i.e., inbound towards downtown San Francisco in the morning and outbound in the afternoon). The peak direction represents the time when the transit service is most crowded and most likely to be affected by additional passengers.

Table 3.2-6
Muni Transit Peak Period Screenlines

Screenline/Corridor	Transit Lines			
	Local		Express/Peak-Only Transit Line	
Northeast				
Kearny/Stockton	20	Columbus[1]		
	30	Stockton		
	45	Union-Stockton	9X	Bayshore Express
Other	10	Townsend	41	Union
	F	Market and Wharves		
Northwest				
Geary Corridor	38	Geary	38AX	Geary A Express
	38L	Geary Limited	38BX	Geary B Express
California	1	California	1AX	California A Express
			1BX	California B Express
Sutter/Clement	2	Clement	4	Sutter
	3	Jackson		
Fulton/Hayes	5	Fulton		
	21	Hayes		
Balboa	31	Balboa	31AX	Balboa A Express
			31BX	Balboa B Express
Chestnut/Union	30	Stockton	30X	Stockton Express
	45	Union-Stockton	41	Union[2]
Southeast				
Third	T	Third Street		
Mission Street	14	Mission	14X	Mission Express
	49	Van Ness-Mission		
San Bruno/Bayshore	9	San Bruno	9X	Bayshore Express
			9AX	Bayshore A Express
			9BX	Bayshore B Express
Other	J	Church		
	12	Folsom		
	19	Polk		
Southwest				
Subway Lines	K	Ingleside		
	L	Taraval		
	M	Ocean View		
	N	Judah		
Haight/Noriega	6	Parnassus	16AX	Noriega A Express
	7	Haight	16BX	Noriega B Express
	71	Haight-Noriega	71L	Haight-Noriega Limited
Other	F	Market and Wharves		

Sources: SFMTA, 2008; SF Planning, 2011b.

Notes:
[1] Implemented or modified after commencement of T Third Street service.
[2] In operation before 2002, but omitted from the previous update.
[3] Previously grouped with the northeast screenline, but now regrouped into the northwest screenline, because it primarily serves the Marina area.
[4] Added because it operates at 7- to 8-minute headways and serves the Mission Corridor.
[5] Added as a result of shifting the PM peak analysis period from 4:00 PM – 7:00 PM to 3:00 PM – 6:00 PM
[6] Added because it operates at 10-minute headways and serves the southeast screenline.
Muni = San Francisco Municipal Railway

Table 3.2-7
Existing Conditions Muni Screenline Analysis by Peak Direction

Screenline	Transit Corridor	AM Peak Hour			PM Peak Hour		
		Demand	Capacity	Utilization (%)	Demand	Capacity	Utilization (%)
Northeast							
	Kearny/Stockton	1,138	1,947	58	1,129	2,010	56
	All Other Lines	744	1,834	41	757	1,589	48
	Subtotal	*1,882*	*3,781*	*50*	*1,886*	*3,599*	*52*
Northwest							
	Geary Corridor	1,697	2,704	63	1,684	2,230	76
	California	1,598	2,351	68	1,413	2,050	69
	Sutter/Clement	616	1,134	54	565	1,008	56
	Fulton/Hayes	992	1,386	72	861	1,260	68
	Balboa	809	1,405	58	615	1,247	49
	Chestnut/Union	1,722	2,457	70	1,483	2,328	64
	Subtotal	*7,434*	*11,437*	*65*	*6,621*	*10,123*	*65*
Southeast							
	Third Street	505	833	61	554	714	78
	Mission Street	1,221	1,880	65	1,254	2,350	53
	San Bruno/Bayshore	1,460	1,880	78	1,671	2,256	74
	Other Lines	1,062	1,708	62	1,189	1,708	70
	Subtotal	*4,248*	*6,301*	*67*	*4,668*	*7,028*	*66*
Southwest							
	Subway Lines	**5,350**	**6,188**	**86**	**5,883**	**6,783**	**87**
	Haight/Noriega	1,029	1,951	53	1,247	2,140	58
	All Other Lines	248	560	44	304	700	43
	Subtotal	*6,627*	*8,699*	*76*	*7,434*	*9,623*	*77*
Total		*20,191*	*30,218*	*67*	*20,609*	*30,373*	*68*

Source: SF Planning, 2011b.

Note:

Bolded numbers indicate lines that operate over 85 percent utilization standard.

Muni = San Francisco Municipal Railway

% = percent

Muni. For Muni transit lines, operating at over 85 percent is considered overcrowded. As shown in Table 3.2-7, all corridor screenlines operate below the 85 percent threshold for transit vehicle loads, except for subway lines crossing the southwest screenline, which operate at 86 percent capacity during the AM peak hour, and 87 percent capacity during the PM peak hour.

Regional Screenline Analysis

AC Transit, BART, Caltrain, Golden Gate Transit, SamTrans, and WETA (water transit service) all provide regional transit service to and from downtown San Francisco. These agencies provide transit service to the East Bay, North Bay, and South Bay. For the purpose of this analysis, the ridership and capacity for these three screenlines are presented for the peak direction of travel, which corresponds with the evening commute in the outbound direction from downtown San Francisco to the region.

For the regional screenline analysis, regional transit is considered overcrowded if it operates at more than 100 percent utilization. As shown in Table 3.2-8, AC Transit, BART Caltrain, Golden Gate Transit, SamTrans, and WETA water transit service all operate under 100 percent utilization.

Table 3.2-8
Existing Conditions Regional Screenline Analysis

Screenline	Transit Corridor	AM Peak Hour[1]			PM Peak Hour[1]		
		Demand	Capacity	Utilization (%)	Demand	Capacity	Utilization (%)
East Bay							
	BART	19,391	24,150	80	20,067	24,150	83
	AC Transit	1,670	3,058	55	2,517	4,193	60
	WETA Water Transit	667	1,186	56	702	1,519	46
	Subtotal	*21,728*	*28,394*	*77*	*23,286*	*29,862*	*78*
North Bay							
	Golden Gate Transit Buses	1,510	2,655	57	1,397	2,205	63
	Golden Gate Transit Ferries	949	1,700	56	906	1,700	53
	Subtotal	*2,459*	*4,355*	*56*	*2,303*	*3,905*	*59*
South Bay							
	BART	10,841	16,800	65	10,202	16,800	61
	SamTrans	2,128	3,250	65	1,986	3,250	61
	Caltrain	686	1,060	65	575	940	61
	Subtotal	*13,655*	*21,110*	*65*	*12,763*	*29,990*	*61*
Total		*37,842*	*53,859*	*70*	*38,352*	*54,757*	*70*

Source: SF Planning, 2011b.

Notes:

- AM peak hour peak direction is inbound to San Francisco. PM peak hour peak direction is outbound from San Francisco.

AC Transit = Alameda-Contra Costa County Transit District
BART = Bay Area Rapid Transit
% = percent
SamTrans = San Mateo County Transit District

Pedestrian Conditions

This section evaluates the pedestrian conditions in the Ferry Terminal, and at the 19 pedestrian study intersections and 10 study crosswalks in the study area, for the AM and PM peak hours.

Ferry Terminal Pedestrian Conditions

Based on AM weekday observations, water transit–related pedestrian platoons formed after debarking. Pedestrian paths from the debarking area to The Embarcadero differed, depending on the gate where the vessel docked. Pedestrians debarking at Gate B, the northernmost gate, tended to stay along the northern perimeter outside of the Ferry Building, although a small proportion of pedestrians did enter the Ferry Building. Water transit passengers debarking at the Golden Gate Ferries Gates C and D generally passed through the Ferry Plaza to the center aisle of the Ferry Building to reach The Embarcadero and Justin Herman Plaza or Market Street. Some pedestrians were observed walking along the southern perimeter of the Ferry Building into the South of Market District. Passengers debarking from Gate E were mainly observed walking along the southern perimeter of the Ferry Building to The Embarcadero. A small number of passengers from Gate E passed through the Ferry Building to The Embarcadero.

During the weekday PM peak period, observed pedestrians were generally visiting the Ferry Building after work either as a destination or to board water transit services. Pedestrian queues were observed at Justin Herman Plaza waiting to cross The Embarcadero. Pedestrian hot spots were also observed along the central corridor of the Ferry Building, the southern perimeter of the Ferry Building, and south of the Ferry Building east of Mission Street and The Embarcadero.

The water transit passengers using Gates B and E generally were not observed using or passing through the Ferry Plaza, which is to the east of the Ferry Building. As noted, the water transit passengers observed traversing the Ferry Plaza were accessing Golden Gate Transit's Gates C and D.

On Tuesdays and Thursdays, the farmer's market, along the western side of the Ferry Building, is open between 10 AM and 2 PM. Pedestrian spaces along the front of the building were slightly congested, with less available walking space, but they were still navigable. During these periods, patrons used the Ferry Building more for recreational or leisure purposes, spending time at the farmer's market, or shopping inside the building itself. This was in contrast to the AM and PM peak periods, when the pedestrians stopped for a short purchase or used the Ferry Building as a passage between the water transit gates and The Embarcadero.

During weekdays, space for pedestrians in and around the Ferry Building was adequate and the overall pedestrian experience is free-flowing and open. In general, there was ample capacity along the central corridor and external perimeter of the Ferry Building during the weekday AM and PM peak periods.

Overall, the interior walkways of the Ferry Building provided an appropriate level of capacity for a comfortable pedestrian experience. The increase of patrons related to the farmer's market still allowed pedestrians to walk somewhat freely between shops. The exterior walkways were very crowded because of the increase in pedestrian activity, and because space ordinarily used as walkways was occupied by farmer's market merchants. During the farmer's market, the area was very congested, and traveling between the front and rear of the Ferry Building was hindered.

Adjacent Sidewalk and Pedestrian Crosswalk Conditions

Adjacent to the Ferry Building along The Embarcadero, sidewalks are between 35 and 55 feet wide. The crosswalks across The Embarcadero are signalized, Americans with Disabilities Act-compliant, and also have pedestrian signals and call buttons. The crosswalks are striped; however, the paint is worn on several of the crosswalks.

Based on field observations, pedestrian volumes were observed to be higher along the eastern side of The Embarcadero, where both commercial and recreational uses are present. This stretch of The Embarcadero was also observed to serve as a recreation area, with cyclists, runners, and walkers all sharing the sidewalk. Pedestrian volumes were observed to be the highest in front of the Ferry Building. The intersection at The Embarcadero and the Ferry Building was observed to be crowded with pedestrians accessing the Ferry Terminal, Ferry Building, and transit services. The pedestrian traffic extended across The Embarcadero to Justin Herman Plaza, and Market Street. The intersection at The Embarcadero near the northern end of the Ferry Building was observed to have fewer pedestrians, but was still crowded.

Intersection Crosswalk Pedestrian Conditions

Pedestrian crosswalk volumes were collected at the same study intersections shown on Figure 3.2-1 for the respective AM and PM peak hours. The greatest amount of pedestrian traffic is centered at the intersections of Drumm Street and California Street (No. 4), Spear Street and Mission Street (No. 9), Spear Street and Howard Street (No. 10), and The Embarcadero and Market Street Southbound and Northbound (No. 16/17) during the AM peak hour; and Drumm Street and California Street (No. 4), Spear Street and Mission Street (No. 9), Drumm Street and Sacramento Street (No. 3), and The Embarcadero and Market Street Southbound and Northbound (No. 16/17) during the PM peak hour.

The intersection of Steuart Street and Market Street is unsignalized and uncontrolled, and therefore was not analyzed from a quantitative standpoint. Qualitatively speaking, conflicts between eastbound vehicles turning right, northbound vehicles turning left, pedestrians using the intersection crosswalks, and bicycles have been detected in the field observations. However, the intersection does not experience a large number of vehicles, and vehicle speeds were observed to be slower due to the 90-degree angle of the intersection. Additionally, the intersection accommodates several Muni bus routes, and the F Market and Wharves Muni metro line. Furthermore, the northern and eastern sides of the intersection are used as parking spaces by merchants selling items on Justin Herman Plaza. Bicycles are present in the intersection as well.

Table 3.2-9 identifies the available space per pedestrian at crosswalks associated with different LOS values.

Table 3.2-9
Crosswalk Level of Service Thresholds

LOS	Space (ft^2/person)
A	> 60
B	> 40-60
C	> 24-40
D	> 15-24
E	> 8-15
F	< 8

Source: TRB, 2000.

Notes:

ft^2 = square feet
> = greater than
LOS = Level of Service

Using the intersection pedestrian crosswalk data, crosswalk LOS analyses have been completed at ten of the 19 study intersections at crosswalks crossing The Embarcadero. These crosswalks were selected to be analyzed because they are those most likely to be impacted by the project, and would experience the greatest numbers of project-related pedestrians. As shown in Table 3.2-10, all of the analyzed crosswalks operate at LOS A, B, C, or D, and are therefore acceptable.

Table 3.2-10
Existing Conditions Crosswalk Pedestrian Analysis

No.	Intersection Name	AM Peak Hour LOS				PM Peak Hour LOS			
		SB Approach		NB Approach		SB Approach		NB Approach	
		Area[1]	LOS	Area	LOS	Area	LOS	Area	LOS
14	The Embarcadero and Washington Street	475.7	A	643.8	A	267.6	A	292.1	A
15A	The Embarcadero Midblock at the Ferry Building Southbound	41.1	B	—	—	23.8	D	—	—
15B	The Embarcadero Midblock at the Ferry Building Northbound	—	—	52.1	B	—	—	29.2	C
16	The Embarcadero and Market Street Northbound	—	—	135.8	A	—	—	73.1	A
17	The Embarcadero and Market Street Southbound	28.9	C	—	—	17.1	D	—	—
18A	The Embarcadero and Mission Street West	241.8	A	—	—	127.5	A	—	—
18B	The Embarcadero and Mission Street East	—	—	168.2	A	—	—	275.1	A
19A	The Embarcadero and Howard Street West	560.8	A	—	—	422.2	A	—	—
19B	The Embarcadero and Howard Street East	—	—	728.2	A	—	—	286.5	A

Source: DKS Associates, 2012.

Notes:

[1] Circulation per area is measured as square feet per pedestrian.

LOS = Level of Service
NB Approach = Northbound vehicular approach
SB Approach = Southbound vehicular approach

Bicycle Conditions

Three classes of bikeways exist within San Francisco: Class I, Class II, and Class III facilities.[3] Class I bicycle paths provide a completely separated right-of-way for the exclusive use of bicycles and pedestrians, with cross flow by motorists minimized. Class II bicycle lanes provide a striped lane on a street or highway. Class III bikeways are signed bicycle routes that provide for shared use with motor vehicle traffic.[4] Class III bicycle routes generally have striping or signage indicating a shared roadway for bicycle and vehicles. The bicycle study area and the bicycle routes in the study area are shown on Figure 3.2-5.

[3] Bicycle facilities are defined by the State of California in the California Streets and Highway Code, Section 890.4.
[4] Caltrans Highway Design Manual – Chapter 1000 Bikeway Planning and Design, June 26, 2006.

Segments of these three bicycle routes (Route 5, 30, and 50) are designated as Class II or Class III bikeways in the study area. In general, these nearest bikeways are striped bicycle lanes with directional signage (as part of the Bike Route system).The Bicycle Route 5 runs from Third Street at King Street in the South of Market Area, to North Point at The Embarcadero in the North Beach Area. Bicycle Route 5 is a Class II facility along The Embarcadero between North Point and Second Street. In the study area, Bicycle Route 5 runs in both directions along The Embarcadero adjacent to the project site. This bicycle route provides a lane of travel separate from the vehicle traffic, allowing it to be used by recreational and commuter bicyclists on a regular basis.

Bicycle Route 30 runs from The Embarcadero at Howard Street in the South of Market Area, to The Great Highway and John F. Kennedy at Ocean Beach. In the study area, Bicycle Route 30 is a Class III bicycle lane. It follows Howard Street in the westbound direction, and ends at The Embarcadero.

Bicycle Route 50 runs from The Embarcadero at Mission Street in the downtown area, to The Great Highway at Sloat Boulevard at Ocean Beach. In the study area, the route is a Class III facility, and continues along Market Street until Steuart Street, follows Steuart Street one block to Mission Street, and then follows Mission Street until ending at The Embarcadero.

Table 3.2-11 (on the page following Figure 3.2-5) shows the bicycle volume totals at the study intersection for the AM and PM peak hours. During the AM and PM peak hours, bicycle activity is heaviest at the intersections of The Embarcadero and Howard Street; The Embarcadero and Washington Street; and The Embarcadero and Mission Street East. Garages with bicycle parking are at the intersections of Steuart Street and Clay Street, and in the blocks bordered by Mission Street, Steuart Street, Folsom Street, and Main Street. In addition, several employer-provided bicycle parking options exist in office buildings in the study area. There is a bicycle station at the BART/Muni Embarcadero Station. In the project area, along the Embarcadero Promenade, there are several bicycle racks. During very busy times at the Ferry Building, bicycles have also been observed locked to railings in the project area.

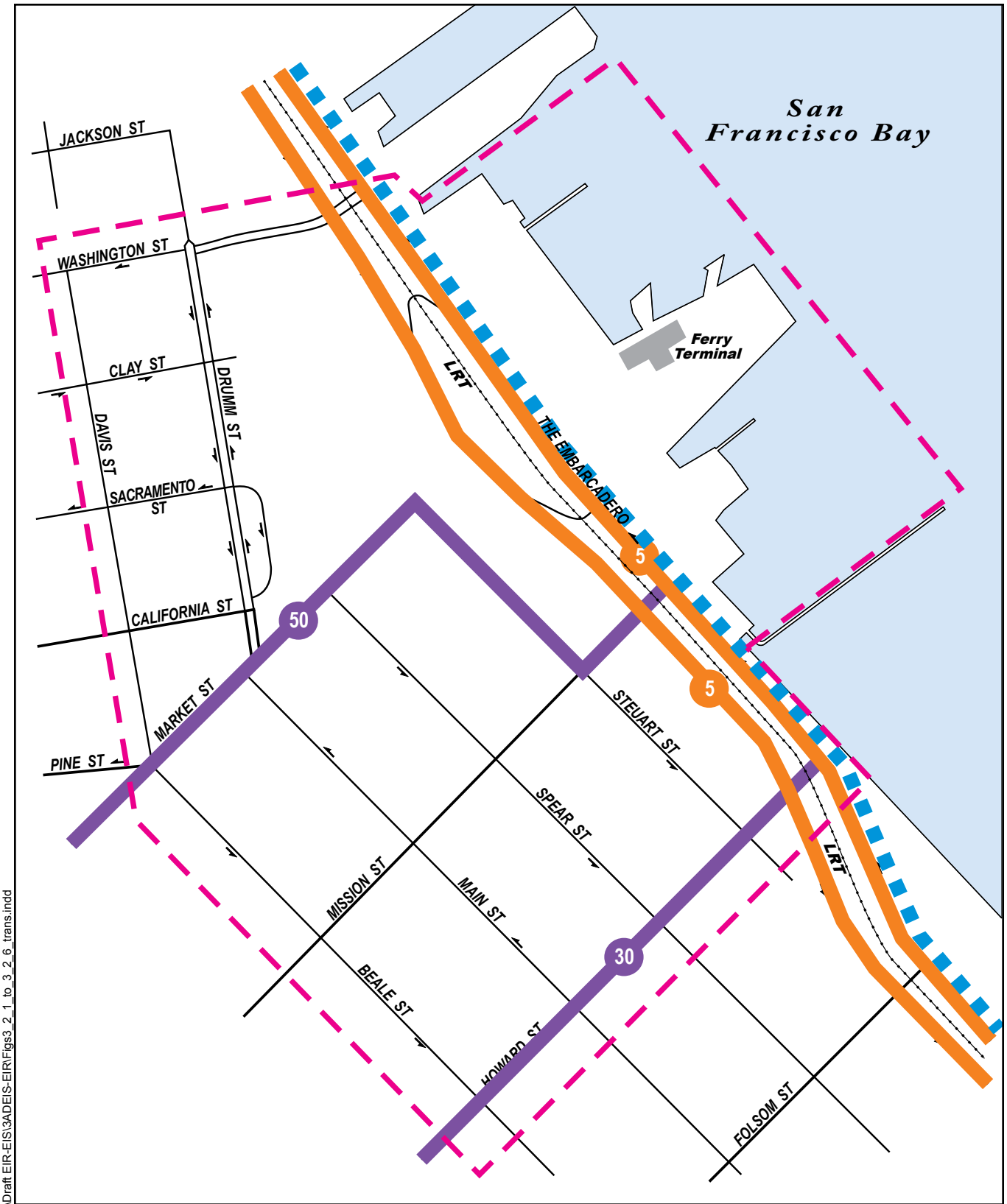
Parking and Loading Conditions

On-street parking capacity exists on most streets in the study area. All the on-street parking is metered. A significant amount of off-street parking exists around the study area, with many of the office buildings surrounding the study area having public parking spaces. In addition, some vacant lots have been converted to fee-based parking spaces. Immediately outside of the Ferry Building, along the eastern side of The Embarcadero, there are two 220-foot white zones. The northernmost of these two white loading zones, which can accommodate up to 11 vehicles, functions as valet parking operated by ACE Parking Management. Parking here can be validated for Ferry Building patrons. The southern white zone is used for freight deliveries for retail in the Ferry Building, discussed below.

In addition, there is limited parking located in the project area near the Agriculture Building and the restaurant on Pier 2. The parking spaces near the Agriculture Building and the restaurant on Pier 2 serve as valet parking spaces for the restaurant on Pier 2.

Amtrak Thruway motorcoach stops are located slightly south of the Ferry Building, and can accommodate two buses at the same time. Similarly, a bus stop for the WETA Baylink bus is slightly north of the Ferry Building and can accommodate one bus.

Currently, loading facilities are limited in the project area. Freight deliveries for Ferry Building tenants are permitted from the Ferry Plaza via a driveway just south of the Ferry Building that connects the Ferry Plaza and The Embarcadero. Freight deliveries are also accommodated curb-side along the eastern side of The Embarcadero at the southern white zone. There are no legal passenger pick-up or drop-off zones adjacent to the Ferry Terminal along the Embarcadero.



Source: DKS Associates, 2012.

- One-way Street
- Study Area
- Class II Bike Route
- Class III Bike Route
- San Francisco Bay Trail

N

Not to scale

STUDY AREA BICYCLE ROUTES

Downtown San Francisco
Ferry Terminal Expansion Project
28067812 San Francisco, California

FIGURE 3.2-5

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Table 3.2-11
Existing Conditions – Intersection Bicycle Volumes

No.	Intersection	AM Peak Hour Bicycles	PM Peak Hour Bicycles
1	Drumm Street and Washington Street	49	62
2	Drumm Street and Clay Street	27	43
3	Drumm Street and Sacramento Street	32	47
4	Drumm Street and California Street	45	30
5	Drumm Street/Main Street and Market Street	92	93
6	Main Street and Mission Street	58	87
7	Main Street and Howard Street	79	111
8	Spear Street and Market Street	97	140
9	Spear Street and Mission Street	73	88
10	Spear Street and Howard Street	83	96
11	Steuart Street and Market Street	93	126
12	Steuart Street and Mission Street	66	85
13	Steuart Street and Howard Street	71	64
14	The Embarcadero and Washington Street	212	233
15A	The Embarcadero Midblock at the Ferry Building Southbound	60	90
15B	The Embarcadero Midblock at the Ferry Building Northbound	81	104
16	The Embarcadero and Market Street Northbound	115	134
17	The Embarcadero and Market Street Southbound	126	141
18A	The Embarcadero and Mission Street West	125	137
18B	The Embarcadero and Mission Street East	140	184
19A	The Embarcadero and Howard Street West	111	106
19B	The Embarcadero and Howard Street East	278	252

Source: DKS Associates, 2012.

When the Ferry Plaza Farmers Market is in operation, related truck loading and parking activity takes place along The Embarcadero, and along the driveway just south of the Ferry Building that connects the Ferry Plaza and The Embarcadero.

The Ferry Plaza is also used by BART to provide access, parking, loading, and staging for its required regular maintenance and operations activities related to its facilities located on the Ferry Plaza.

Multimodal Circulation near the Ferry Terminal

The area of The Embarcadero in front of the Ferry Building has been observed to experience a number of transportation and circulation conflicts due to the variety of activities in this area. With bus stops, valet parking, passenger and loading vehicle activity, bicycle routes, and heavy pedestrian traffic, there have been conflicts and congestion observed between pedestrians, vehicles, and bicyclists along The Embarcadero in front of the Ferry Terminal. Bicycle Route 5 and the Embarcadero Promenade (part of the San Francisco Bay Trail) run along The Embarcadero in front of the Ferry Terminal. Along the Embarcadero Promenade, bicycles are permitted to use either the sidewalk or the adjacent bike lane.

Vehicles picking up or dropping off in front of the Ferry Building (e.g., deliveries or using valet) must maneuver from the vehicle moving lanes, across the bicycle lane, and to the curbside. Based on field observations, this movement creates conflicts between vehicles and bicyclists. Parked vehicles have been observed double-parked in the bicycle lane, creating other sources of vehicle-cyclist conflict. Vehicle-vehicle conflicts have also been observed as a result of maneuvering between moving lanes and the curbside, and double-parked vehicles have been observed restricting northbound vehicle travel lanes. Pedestrian-cyclist conflicts are also present due to bicyclists riding on The Embarcadero sidewalk. Conflicts between vehicles and pedestrians near the gates have also been observed on days when the farmer's market is operating.

Emergency Access and Use

Emergency vehicle access at the project area is available along The Embarcadero curbside. Emergency vehicles would primarily access the project area from Mission and Howard streets, approaching the project area along the northbound lane of The Embarcadero. In addition, there are two curb cuts and driveways south of the Ferry Building that provide emergency vehicle access to the eastern side of the Ferry Building and the facilities located on the Ferry Plaza (Gates C and D, the Carnelian by the Bay, and BART facilities). The driveway just south of the Ferry Building also serves as a fire lane. Two additional curb cuts and emergency vehicle access points are north of the Ferry Building.

BART has evacuation facilities on the Ferry Plaza; in the case of an emergency in the Transbay tube, passengers would be evacuated to the Ferry Plaza.

The San Francisco Fire Department (SFFD) provides fire protection and emergency medical services for the residents, visitors, and workers of San Francisco. This includes property under the jurisdiction of the Port of San Francisco (Port), including the project area. The following SFFD stations provide the first response for fire suppression, rescue, and emergency medical service in the project area:

- Station 1 at 676 Howard Street at Third Street;
- Station 2 at 1340 Powell Street at Broadway;
- Station 13 at 530 Sansome Street at Washington Street; and
- Station 35 at Pier 22½, Harrison, and The Embarcadero (this station has fireboats and responds to in-water emergencies).

The U.S. Coast Guard (USCG) assists the SFFD in the event of emergencies on water vessels or along the waterfront. Per the USCG's Sector San Francisco Marine Firefighting Contingency Plan (USCG, 2008), the USCG's Captain of the Port for the San Francisco sector works with the port authorities and local governments within their area of jurisdiction to maintain current and effective contingency plans.

Emergency vessels can access the facilities in the project area (water transit gates, BART facilities, restaurants, and the Agriculture Building) from the water side of the project area, if necessary.

Regulatory Setting

Water Emergency Transportation Authority

WETA was established by State Bill 976 in 2007 to replace the San Francisco Bay Water Transit Authority, which was created in 1999. WETA has been authorized by the State of California to oversee and operate a public water transit system within the Bay Area. WETA created and adopted an Emergency Water Transportation System Management Plan for the Bay Area in 2009. This plan integrates and complements the emergency plans of other agencies, to ensure mobility within the Bay Area following a major disaster.

Planning Department of the City and County of San Francisco

The CCSF Planning Department has published *Transportation Impact Analysis Guidelines for Environmental Review* to guide preparation of transportation impact analysis for environmental evaluation. These guidelines provide significance criteria for analyzing the impact of a project on traffic, Muni transit, regional transit, parking, pedestrian and bicycle facilities, freight loading and service, and passenger loading zones.

San Francisco Bay Trail Plan

The San Francisco Bay Trail Plan is a project of the Association of Bay Area Governments and aims to provide a bicycle and pedestrian trail around the shoreline of San Francisco Bay. Currently, 310 miles of the proposed 500-mile tail have been developed for bicycling and hiking, including the portion of the San Francisco Bay Train in the project area.

San Francisco General Plan

The Transportation Element of the San Francisco General Plan is composed of nine sections that define and relate the components of the city's transportation system. The nine sections include: General, Regional Transportation, Congestion Management, Vehicle Circulation, Transit, Pedestrians, Bicycles, Citywide Parking, and Goods Movement. Included in the Transportation Element of the San Francisco General Plan is reference to the "Transit First" Policy adopted by CCSF in 1973.

San Francisco Transit First Policy

The San Francisco's Transit First Policy was first adopted by the Board of Supervisors in 1973 and incorporated into the City Charter in 1998 by the voters of San Francisco. The motivation behind the Transit First Policy is to ensure the City's commitment to give priority to alternative modes of transportation over the personal vehicle, through a set of defined principles. These principles include the following:

1. To ensure quality of life and economic health in San Francisco, the primary objective of the transportation system must be the safe and efficient movement of people and goods.

2. Public transit, including taxis and vanpools, is an economically and environmentally sound alternative to transportation by individual automobile. Within San Francisco, travel by public transit, by bicycle, and on foot must be an attractive alternative to travel by private automobile.

3. Decisions regarding the use of limited public street and sidewalk space shall encourage the use of public rights-of-way by pedestrians, bicyclists, and public transit, and shall strive to reduce traffic and improve public health and safety.

4. Transit priority improvements, such as designated transit lanes and streets and improved signalization, shall be made to expedite the movement of public transit vehicles (including taxis and vanpools) and to improve pedestrian safety.

5. Pedestrian areas shall be enhanced wherever possible to improve the safety and comfort of pedestrians and to encourage travel by foot.

6. Bicycling shall be promoted by encouraging safe streets for riding, convenient access to transit, bicycle lanes, and secure bicycle parking.

7. Parking policies for areas well served by public transit shall be designed to encourage travel by public transit and alternative transportation.

8. New transportation investment should be allocated to meet the demand for public transit generated by new public and private commercial and residential developments.

9. The ability of CCSF to reduce traffic congestion depends on the adequacy of regional public transportation. CCSF shall promote the use of regional mass transit and the continued development of an integrated, reliable, regional public transportation system.

10. CCSF shall encourage innovative solutions to meet public transportation needs wherever possible and where the provision of such service will not adversely affect the service provided by Muni. (Added November 1999).

Better Streets Plan

The Better Streets Plan is an effort by the CCSF to design a street system to promote citizen needs for the use and enjoyment of public spaces for all. Similar to the Transit First Policy, the Better Streets Plan prioritizes walking, bicycling, transit, and the use of streets as public spaces for all. The Better Streets Plan focuses on streetscape design, traffic calming measures, and best practice models to ensure multi-modal safety with emphasis on pedestrian well-being.

San Francisco Bicycle Plan

The *San Francisco Bike Plan*, approved in June 2009, includes minor changes to the existing facilities near the project. Improvements, including markings, signage, and facilities are considered treatments necessary to improve conditions for bicycle use.

3.2.3 Impact Evaluation

Because the project is located within the jurisdiction of CCSF, the San Francisco Planning Department's guidance and analysis criteria have been applied to the proposed project. The criteria that the Planning Department uses to evaluate transportation impacts associated with a proposed project are listed below. The analysis considered whether the project would:

- Cause the signalized intersection LOS to deteriorate from LOS D or better to LOS E or F, or from LOS E to LOS F, which would be considered significant. The operational impacts on unsignalized intersections are considered potentially significant if project-related traffic causes the LOS at the worst approach to deteriorate from LOS D or better to LOS E or F, and California Department of Transportation signal warrants would be met, or would cause California Department of Transportation signal warrants to be met when the worst approach is already operating at LOS E or F. The project may result in significant adverse impacts at intersections that operate at LOS E or F under existing conditions, depending on the magnitude of the project's contribution to the worsening of the average delay per vehicle. In addition, the project would have a significant adverse impact if it would

cause major traffic hazards or contribute considerably to cumulative traffic increases that would cause LOSs to deteriorate to unacceptable levels.

- Cause a substantial increase in transit demand (Muni, BART, AC Transit, water transit service, Golden Gate Transit Bus, Caltrain, and SamTrans) that could not be accommodated by adjacent transit capacity, resulting in unacceptable levels of transit service. Specifically, with the Muni and regional transit screenline analyses, the project would have a significant effect on the transit provider if project-related transit trips would cause the capacity utilization standard to be exceeded during the PM peak hour. Additionally, the project would have a significant effect on the environment if it causes increases in delays or operating costs substantial enough that significant adverse impacts in transit-service levels result. For transit services, impacts in the peak direction of travel are considered (e.g., generally inbound to downtown San Francisco in the morning and outbound in the afternoon).

- Result in substantial overcrowding on public sidewalks, create potentially hazardous conditions for pedestrians, or otherwise interfere with pedestrian accessibility to the site and adjoining areas.

- Create potentially hazardous conditions for bicyclists, or otherwise substantially interfere with bicycle accessibility to the site and adjoining areas.

- Result, during the peak hour of freight-related loading activities, in a freight-related loading demand that could not be accommodated within proposed onsite loading facilities or within convenient on-street loading zones, and created potentially hazardous conditions or significant delays affecting traffic, transit, bicycle, or pedestrians.

- Hinder emergency vehicle access.

- Result in any of the above-described conditions for its construction-related impacts.

There are currently pullouts located in front of the Ferry Building on The Embarcadero, as well as a space on the Ferry Plaza behind the Ferry Building, which are used for freight loading activities for Ferry Building tenants, Golden Gate Transit, Carnelian by the Bay, and BART facility operators. The proposed improvements (including construction activities) would not temporarily or permanently remove, modify, or block access to the existing loading areas. The proposed project would also not be expected to increase freight-loading operations. Therefore, the project would have no impact on freight-loading activities or existing loading areas in the project area.

Emergency access to the back of the Ferry Building and Ferry Plaza area is available via two driveways between the Ferry Building and the Agriculture Building. Two additional access points are north of the Ferry Building. Emergency vehicles may also park along the curb to access the Ferry Building. In addition, emergency vessels may access the site from the water side. The proposed improvements (including construction activities) would not temporarily or permanently remove, modify, or block access to these locations. The proposed project would improve pedestrian circulation areas. It would also include wayfinding signage at the Ferry Terminal that would improve pedestrian flow, enabling emergency site access, like the fire lane, to remain clear and accessible in the event of an emergency. Therefore, the project would have no impact on emergency vehicle access.

As described in Section 3.1, the impacts associated with WETA's planned expansion of water transit routes and services were analyzed in the Program Environmental Impact Report (EIR) for the Implementation and Operations Plan (WETA, 2003a), and therefore are not assessed in this Environmental Impact Statement (EIS)/EIR. This EIS/EIR analyzes—at a project level—the site-specific impacts of improvements to the Ferry Terminal, and impacts associated with the increase in vessels and additional passengers while they use and/or are docked at the Ferry Terminal. The Program EIR analyzed

the impacts to navigation associated with the regional and cumulative increase in water transit vessels operations on San Francisco Bay. The Program EIR analysis concluded that increases in vessel traffic have the potential to increase conflicts with other commercial and recreational users of San Francisco Bay. These impacts would be reduced substantially through the implementation of a number of best management practices that should be considered in new terminal design and vessel operations. Refer to the Program EIR for additional information.

Chapter 2.0 of the EIS/EIR describes the navigation safety practices that have been incorporated into the proposed project. Section 3.4, Parklands and Recreation, assesses the potential for site-specific recreational impacts at the Ferry Terminal.

Conditions for Analysis

Person trips could potentially be generated by the project in two different ways: construction period trips and additional future passenger water transit ridership that would be accommodated by the facility improvements. Construction period trips are analyzed under Construction Impacts, below. No additional employees or services would be required during operation. All current and future WETA vessels would be stocked and serviced at other terminal locations. Vessel crews would also board in the outlying terminal locations. Therefore, there would be no additional person trips generated by project operation.

Because the facility improvements would accommodate an increase in water transit service and therefore the number of passengers coming through the Ferry Terminal, the impact of the additional water transit ridership is evaluated in this EIS/EIR under Indirect Impacts. The new gates would be constructed by 2020, and the operational ridership estimates are for 2035. The analysis takes into consideration the WETA ridership capacity available without the project; the growth of non-WETA water transit services at the Ferry Terminal; and project-related ridership growth that could result from the expansion of facilities. These considerations led to the development of three scenarios for evaluation: the Existing Conditions Plus Project,[5] Future (2035) with the No Project Alternative, and Future (2035) Plus Project. Consistent with the CCSF guidelines, to assess the incremental effects of the project, the circulation conditions in the Existing Conditions Plus Project were compared to the Existing Setting (Impacts 3.2-1 through 3.2-4). In addition, to assess the cumulative impacts of the incremental effects of the project (Impacts 3.2-6 through 3.2-9), the circulation conditions in the Future (2035) Plus Project were compared to the circulation conditions as they would be under the Future (2035) with the No Project Alternative. The following describes the ridership forecasts, person trip increments, and other planned network changes that would apply for each condition for analysis.

Existing Conditions Plus Project – Ridership Forecast, Mode Split, and Distribution

For the Existing Conditions Plus Project, it is assumed that changes that would result from the implementation of the proposed project would be made to the transportation network as it exists today. This condition also assumes that all projected future ridership for 2035 would occur in the Existing Condition. For the transportation network, the existing roadway, transit, pedestrian, and bicycle conditions described in Section 3.2.2 are assumed.

As described in Section 2.3 of this EIS/EIR, the proposed project is the expansion and improvement of the Ferry Terminal, needed to accommodate the full expansion of water transit service that was described in WETA's Implementation and Operations Plan, and in Table 1-2 of this EIS/EIR.

[5] Pursuant to rulings in two recent CEQA cases (*Sunnyvale West Neighborhood Assoc. v. City of Sunnyvale City Council [*6th Dist. 2010] 190 Cal.App.4th 1351 and *Pfeiffer v. City of Sunnyvale City Council* [6th Dist. 2011]), the project's anticipated effects on the transportation and circulation network were assessed on both the existing transportation network and the transportation network that would be expected to exist at the time the project is fully operational (e.g., Future [2035]).

With the proposed facility improvements, the Ferry Terminal could accommodate the full expansion of future water transit services expected to serve the Ferry Terminal. This would result in an increase in passengers using WETA services, as shown in Table 3.2-12. The AM peak period for WETA services is from 6:30 AM to 9:00 PM, and the ridership projections include passengers both arriving and departing from the Ferry Terminal. During the AM peak period, 96 percent of passengers would be arriving at the Ferry Terminal via inbound water transit services, and 4 percent would be arriving at the Ferry Terminal from San Francisco to depart using outbound water transit services to the East Bay, North Bay, South Bay, or Treasure Island. The PM peak period is from 4:00 PM to 6:30 PM, and the percentage of passengers arriving and departing from the Ferry Terminal in the PM peak period would be reversed from the AM peak period; that is, 96 percent of passengers would be arriving at the Ferry Terminal from San Francisco to depart using outbound water transit services, and 4 percent would be arriving at the Ferry Terminal via inbound water transit services from the East Bay, North Bay, South Bay, or Treasure Island.

Table 3.2-12
Existing Conditions Plus Project Ridership

Water Transit Service Provider	Daily		AM Peak Period		PM Peak Period		AM Peak Hour[1]		PM Peak Hour[1]	
	Existing Conditions	Existing Conditions Plus Project	Existing Conditions	Existing Conditions Plus Project	Existing Conditions	Existing Conditions Plus Project	Existing Conditions	Existing Conditions Plus Project	Existing Conditions	Existing Conditions Plus Project
WETA[2]	5,119	25,714	1,385	7,710	1,564	8,706	923	4,500	1,042	4,979
Golden Gate Transit[3]	6,057	6,057	1,435	1,435	1,435	1,435	956	956	956	956
Total	11,176	31,771	2,820	9,145	2,999	10,141	1,879	5,456	1,998	5,936
Project-related Incremental Increase	—	**+20,866**	—	**+6,325**	—	**+7,142**	—	**+3,577**	—	**+3,937**

Sources: CSI, 2011; Fehr & Peers, 2010; DKS Associates, 2012.

Notes:

1 Peak-hour estimates for all services except Treasure Island were assumed to be 66.64 percent of the peak-period ridership. This was based on actual ridership counts on existing WETA services conducted in May 2010. For Treasure Island service, the peak-hour ridership estimates were from the Environmental Impact Report for the Treasure Island and Yerba Buena Island Redevelopment Plan. The peak period and daily ridership for Treasure Island were then estimated based on the peak-hour estimate.

2 Totals for WETA service; includes all services that operate from Gate B and Gate E and would operate from new Gates A, F, and G. This includes the service operated by WETA, as well as the Blue & Gold Fleet Service to Tiburon.

3 The proposed project would not affect Golden Gate Transit Ferry service. For the Existing Conditions Plus Project, it is assumed that Golden Gate Transit service would operate with the number of passengers and arrivals as it does currently.

WETA = Water Emergency Transportation Authority

As shown in Table 3.2-12, 11,176 passengers currently arrive at the Ferry Terminal on a daily basis. With the implementation of the proposed project, total ridership would increase by 184 percent, to 31,771 passengers per weekday. Of this total, 25,714 passengers would be using WETA services. Total ridership during the AM peak hour would increase 190 percent, from 1,879 passengers to 5,456 passengers. Similarly, total ridership during the PM peak hour would increase 197 percent, from 1,998 to 5,936 passengers.

A combination of the WETA ridership model and ridership surveys conducted in 2011 were used to develop site-specific estimates of transportation mode splits for this project. The detailed methodology is available in the Transportation Impact Study (WETA, 2013). Table 3.2-13 (on the following page) provides the transportation mode splits for new WETA passengers within San Francisco, based on the travel demand model and ridership surveys.

Table 3.2-13
Existing Conditions Plus Project Mode Split and Assignment

Mode	Mode (%)	AM Peak Hour Passengers	PM Peak Hour Passengers
Auto	0	0	0
Transit	37	1,320	1,435
Walk	57	2,052	2,274
Bike	6	205	228
Total	**100**	**3,577**	**3,937**

Sources: WETA, 2011; CSI, 2012; DKS Associates, 2012.

Note:

The WETA ridership model grouped walking and biking in one category; i.e., nonmotorized. The ratio of walkers to bicyclists was estimated at 91 percent to 9 percent, based on passenger survey data collected in 2011 for WETA water transit services into the Ferry Terminal.

The mode split percentages represent the mode split for the increment of additional water transit passengers from the proposed project (not the total mode split for water transit passengers).

WETA = Water Emergency Transportation Authority

No auto access or egress trips are expected to be generated in San Francisco by the project; however, WETA passengers may occasionally be dropped off at or picked up from the Ferry Terminal by taxis or other vehicles. There are currently no legal pick-up or drop-off zones adjacent to the Ferry Terminal along The Embarcadero. Vehicles, including taxis, would have to stop illegally or use designated taxi stands, which are located at some distance from the Ferry Terminal (e.g., on Market Street). Illegal pick-ups and drop-offs in front of the Ferry Terminal may continue in the future, but the number of vehicle trips is expected to remain small—10 to 30 trips or fewer during the AM and PM peak hours—if the curbside restrictions continue to be strictly enforced.

The WETA model and ridership surveys also provide origin and destination information within San Francisco. As shown in Table 3.2-14, the trip distribution would result in 92.0 percent trips to Superdistrict 1; 2.6 percent to Superdistrict 2; 2.3 percent to Superdistrict 3; and 3.1 percent to Superdistrict 4.

Table 3.2-14
Existing Conditions Plus Project – Trip Distribution

Place of Trip Origin/ Destination	Traveling to San Francisco – Transit (%)	Traveling to San Francisco – Walk/Bike (%)	Traveling from San Francisco – All Modes
San Francisco			
Superdistrict 1	82.2	96.8	—
Superdistrict 2	7.3	0.4	—
Superdistrict 3	75.8	0.6	—
Superdistrict 4	4.7	2.3	—
East Bay	—	—	36.3
North Bay	—	—	29.7
South Bay	—	—	0.6
Treasure Island	—	—	33.4
Total	**100**	**100**	**100**

Sources: CSI, 2011; Fehr & Peers, 2010; DKS Associates, 2012.

Note:

% = percent

Future (2035) with the No Project Alternative – Ridership Forecast

For the Future (2035) with the No Project Alternative, it is assumed that no new gates or additional boarding capacity would be provided to accommodate new WETA services, or the expansion of existing WETA services. Only increases in passenger and water transit vessel arrivals that could be accommodated with the existing facilities at the Ferry Terminal (i.e., at existing Gate B and Gate E) would occur as a part of the Future (2035) with the No Project Alternative. The existing infrastructure available to WETA at the Ferry Terminal could accommodate up to 7,800 WETA passengers per weekday; 2,339 passengers during the AM peak period, and 2,641 passengers during the PM peak period. This would represent a 61 percent increase in daily ridership, and a 69 percent increase in ridership for both the AM and PM peak periods. A total of 65 WETA vessels would arrive on a daily basis, with 20 vessels arriving during each of the AM and PM peak periods.

The Future (2035) with the No Project Alternative includes the projected WETA ridership in 2035 under the No Project Alternative, as well as those changes in the transportation system that would be expected to be in place for Future (2035) Conditions. Therefore, Future (2035) with the No Project Alternative would also include the forecasted increases in the Golden Gate water transit service at the Ferry Terminal described in Table 3.2-15.

Table 3.2-15
Future (2035) with the No Project Alternative Ridership

Water Transit Service Provider	Daily Ridership		AM Peak Period Ridership		PM Peak Period Ridership		AM Peak Hour Ridership [1]		PM Peak Hour Ridership[1]	
	Existing Conditions	Future (2035) with the No Project Alternative	Existing Conditions	Future (2035) with the No Project Alternative	Existing Conditions	Future (2035) with the No Project Alternative	Existing Conditions	Future (2035) with the No Project Alternative	Existing Conditions	Future (2035) with the No Project Alternative
WETA [2]	5,119	7,800	1,385	2,339	1,564	2,641	923	1,365	1,042	1,510
Golden Gate Transit[3]	6,057	6,433	1,435	2,233	1,435	2,233	956	1,488	956	1,488
Total	11,176	14,233	2,820	4,572	2,999	4,874	1,879	2,853	1,998	2,998
Project-related Incremental Increase	**—**	**+2,952**	**—**	**+954**	**—**	**+1,077**	**—**	**+442**	**—**	**+468**
Incremental Increase (Total)	—	+3,328	—	+1,752	—	+1,875	—	+974	—	+1,000

Sources: CSI, 2011; Fehr & Peers, 2010; DKS Associates, 2012.

Notes:

[1] Peak-hour estimates for all services except Treasure Island were assumed to be 66.64 percent of the peak-period ridership. This was based on actual ridership counts on existing WETA services conducted in May 2010. For Treasure Island service, the peak-hour ridership estimates were from the Environmental Impact Report for the Treasure Island and Yerba Buena Island Redevelopment Plan. The peak-period and daily ridership for this route were then estimated based on the peak-hour estimate.

[2] Totals for WETA service; includes all services that operate from Gate B and Gate E. This includes the service operated by WETA, as well as the Blue & Gold Fleet Service to Tiburon.

[3] The proposed project would not affect Golden Gate Transit Ferry service. The projected increases in Golden Gate Transit are those projected to occur independent of the proposed project.

WETA = Water Emergency Transportation Authority

Future (2035) Plus Project – Ridership Forecast, Mode Split, and Distribution

The Future (2035) Plus Project condition describes the transportation system as it would be expected in 2035, including the projected increase in Golden Gate Transit ridership, as detailed in the Future (2035) with the No Project Alternative description above. It also includes the changes that would result from the implementation of the proposed project (as also described for the Existing Conditions Plus Project, above). Table 3.2-16 summarizes the water transit ridership that would be expected under this condition.

Table 3.2-16
Future (2035) Conditions – Ridership

Water Transit Service Provider	Daily		AM Peak Period		PM Peak Period		AM Peak Hour[1]		PM Peak Hour[1]	
	Future (2035) with the No Project Alternative	Future (2035) Plus Project	Future (2035) with the No Project Alternative	Future (2035) Plus Project	Future (2035) with the No Project Alternative	Future (2035) Plus Project	Future (2035) with the No Project Alternative	Future (2035) Plus Project	Future (2035) with the No Project Alternative	Future (2035) Plus Project
WETA[2]	7,800	25,714	2,339	7,710	2,641	8,706	1,365	4,500	1,510	4,979
Golden Gate Transit[3]	6,433	6,433	2,233	2,233	2,233	2,233	1,488	1,488	1,488	1,488
Total	14,233	32,147	4,572	9,943	4,874	10,939	2,853	5,988	2,998	6,467
Project-related incremental increase		**+17,914**		**+5,371**		**+6,065**		**+3,135**		**+3,469**

Sources: CSI, 2011; Fehr & Peers, 2010; DKS Associates, 2012.

Notes:

[1] Peak-hour estimates for all services except Treasure Island were assumed to be 66.64 percent of the peak-period ridership. This was based on actual ridership counts on existing WETA services conducted in May 2010. For Treasure Island service, the peak-hour ridership estimates were from the Environmental Impact Report for the Treasure Island and Yerba Buena Island Redevelopment Plan. The peak-period and daily ridership for this route were then estimated based on the peak-hour estimate.

[2] Totals for WETA service includes all services that operate from Gate B and Gate E. This includes the service operated by WETA, as well as the Blue & Gold Fleet Service to Tiburon.

[3] The proposed project would not affect Golden Gate Transit Ferry service. The projected increases in Golden Gate Transit are those projected to occur independent of the proposed project.

WETA = Water Emergency Transportation Authority

Table 3.2-17 (on the following page) shows the expected mode split and assignment for the incremental increase in passengers for the Future (2035) Plus Project.

The origin and destinations for the incremental increase of water transit passengers for the Future (2035) Plus Project would follow distribution provided for the Existing Conditions Plus Project in Table 3.2-14.

Reasonably Foreseeable Projects Considered in the Cumulative Impact Analysis (i.e., Future 2035 Analysis)

Future traffic volumes have been derived from the San Francisco County Transportation Authority countywide travel demand forecasting model. The San Francisco County Transportation Authority model takes into account projected growth in housing, employment, and infrastructure improvements for San Francisco and the nine-county Bay Area. To describe potential future changes to the study area roadway network, the Northeast Waterfront Area Plan of the San Francisco General Plan is referenced where applicable.

Table 3.2-17
Future (2035) Plus Project Mode Split and Assignment

Mode	Mode (%)	AM Peak Hour Passengers	PM Peak Hour Passengers
Auto	0	0	0
Transit	40	1,273	1,376
Walk	55	1,693	1,903
Bicycle	5	169	190
Total	**100**	**3,135**	**3,469**

Sources: WETA, 2011; CSI, 2012; DKS Associates, 2012.

Note:

The WETA ridership model grouped walking and biking in one category; i.e., nonmotorized. The ratio of walkers to bicyclists was estimated at 91 percent to 9 percent, based on passenger survey data collected in 2011 for WETA water transit services into the Ferry Terminal.

The mode split percentages represent the mode split for the increment of additional water transit passengers from the proposed project (not the total mode split for water transit passengers).

WETA = Water Emergency Transportation Authority

In the project area, programmed or planned transportation facility improvements that would be expected to affect the transportation and circulation network in 2035 include the implementation of the Transit Effectiveness Project (TEP), the San Francisco Bicycle Plan, BART's Ferry Plaza Barrier Project, the New Transbay Terminal, development of the Muni E-Embarcadero, and the Transit Center District Plan (TCDP) Public Realm Program. These projects are intended to improve the safety of transportation facilities, and may affect circulation, transit, pedestrian, bicycle, and traffic conditions in the study area. Affected corridors and streets would include Market Street, Mission Street, The Embarcadero, Steuart Street, and Spear Street.

Transit Effectiveness Project. TEP is a planning effort between the SFMTA and CCSF's Controller's Office that reviews and evaluates San Francisco's public transportation system, and provides recommendations to make Muni service reliable, efficient, and quicker. Initial planning documents and findings were presented in October 2008. An Implementation Strategy was developed in 2011, and reflects an update to the findings from 2008, because some of the recommendations were implemented between December 2009 and September 2010. The TEP includes the following changes to transit services in the study area:

- The proposed frequencies for the 1 California line would be 6 to 7 minutes during peak demand, 5 minutes during midday, and 12 minutes in the evening east of Presidio Avenue.
- The 2 Clement line would add supplemental trolley coach service between downtown and Presidio to maintain trunk service on Sutter, replacing the discontinued 3 Jackson. Although current frequencies are 12 minutes during the peak and 20 minutes during midday, the proposed frequencies east of Market Street would be 10 minutes during the peak demands, and 20 minutes during midday and in the evening.
- The 14 Mission would use motor coaches, and the limited-stop service would use trolley coaches. No route changes are proposed for the 14 Mission/14L Mission Limited. Service hours would be expanded for the 14L Mission Limited to operate from 6:00 AM to 8:00 PM. Mission Street would have more frequent service at all times during the day, provided by all-day local and limited-stop service (14L and 49L). Limited-stop service on the 14L would be changed from the current frequency of 9 to 10 minutes all day, to 7 to 8 minutes during peak hours, 9 minutes midday, and 15 minutes (7 to 8 minutes when combined with 49L) during the evening.
- The frequency of service for the 21 Hayes during peak hours would increase from 9 to 8 minutes.
- The frequency of service for the 31 Balboa during the PM peak hours would increase from 14 to 12 minutes.

- The frequency of service for the 41 Union during peak hours would increase from 8 to 7 minutes.
- The frequency of service for the 82X Levi Plaza Express during the PM peak hours would decrease from 12 to 15 minutes.
- The frequency for the F Market and Wharves would decrease to 10 minutes during the evening.
- More frequent service for the N Judah during peak hours to increase capacity and reduce crowding would change the current frequencies of 7 minutes during peaks, 10 minutes midday, and 10 minutes in the evening to 6 minutes during peaks, and 10 minutes midday and in the evening.

San Francisco Bicycle Plan. The San Francisco Bicycle Plan, approved in June 2009, proposes minor changes to the existing facilities on Mission Street between The Embarcadero and Steuart Street, and Steuart Street between Market Street and Mission Street (SFMTA, 2009). Minor improvements, including markings, signage, and facilities, are considered treatments necessary to improve conditions for bicycle use, and are not specified in more detail by route in the Bicycle Plan. Additionally, the Bicycle Plan identifies one near-term bicycle improvement (Project 2-9) along Howard Street. A bicycle lane along Howard Street between The Embarcadero and Fremont Street would be constructed by 2014.

E Embarcadero. Muni also has plans to implement a new transit line: E Embarcadero. This line would operate between the Fourth and King Station, and ultimately terminate in Fort Mason. In the project area, the E Embarcadero would share tracks and stations with the N Judah and T Third Street south of Market Street, and the F Market and Wharves north of Market Street. The expected future capacity of this line is 280 passengers during the AM and PM peak hours.

BART Ferry Plaza Physical Barrier Project. As described in Table 3.1-1, BART is implementing a project that involves the installation of physical barriers on the Ferry Plaza to protect BART's facilities. The barriers would be expected to affect pedestrian and vehicular circulation on the Ferry Plaza, and would require the relocation and/or removal of concrete planters on the Ferry Plaza.

New Transbay Terminal and Transit Center District Plan. The new Transbay Terminal, currently under construction, would serve as the new bus hub for service in San Francisco and to the East Bay, North Bay, Peninsula, and South Bay for AC Transit, Golden Gate Transit, Greyhound Bus Lines, SamTrans, and Muni.

The goal of the TCDP is to shape the area surrounding the new Transbay Terminal to maximize land use density and create a public realm that would accommodate the increase of the transportation network in the area. The TCDP has a recommended Public Realm Plan that comprises a comprehensive series of changes to the transportation network surrounding the Transit Center. These changes include modifications to the roadway, transit, pedestrian, and bicycle networks, as well as loading and parking changes. Given the proximity of the TCDP to the transportation study area, some of these plans are in the study area for the project.

In terms of roadway changes, one lane of eastbound travel would be removed along Howard Street between Fremont Street and Main Street. Along Beale Street, one southbound travel lane between Market Street and Folsom Street would be removed, and one northbound travel lane between Folsom Street and Market Street along Main Street would be removed. Two-way traffic along Spear Street between Market Street and Folsom Street would occur through the conversion of one southbound travel lane to a northbound travel lane. Also, a new alley segment of Tehama Street would be constructed between Beale Street and Main Street.

The Public Realm Plan would extend the Mission Street transit-only lane from Beale Street to Main Street, and a new transit-only lane would be provided southbound on Beale Street between Market Street

and approximately Natoma Street. The future Transbay Transit Center would include a ground floor Bus Plaza, which buses would enter from Beale Street.

Sidewalks would be widened along Mission Street, Howard Street, Beale Street, Main Street, and Spear Street by removing on-street parking lanes and/or travel lanes. Construction of mid-block pedestrian crossings would be implemented at the intersections of Beale Street and Natoma Street, and Main Street and Natoma Street. Bulb-outs would be constructed at various intersections, including those along Main Street, Spear Street, and Howard Street, to reduce crossing times and distances.

The Public Realm Plan would modify the bicycle network, and improve safety through the creation of two-way traffic on currently one-way streets. A reduction in travel lanes would be implemented along roadways with bicycle facilities, including Howard Street.

On-street commercial loading spaces along Mission Street would be consolidated into 50- to 100-foot-long loading "pockets" or "turn-outs," similar to those along Market Street. On-street parking would be reduced or eliminated on Mission Street between Third Street and Main Street (both sides); Howard Street between Third Street and Main Street (one side only, varies by block); and Beale Street between Market Street and Folsom Street (west side between Market Street and Mission Street, both sides between Mission Street and Howard Street).

Direct Impacts

No modifications would be constructed at the Ferry Terminal under the No Action Alternative. Therefore, the circulation network would not be directly affected.

All facility improvements would be constructed to the east of The Embarcadero, and would not directly affect the circulation network. All project improvements would occur in areas directly controlled by the Port, and would not affect, encroach upon, or modify any property or access to property under the control of other entities, including transportation easements or rights-of-way. Because no additional employees or services would be required at the Ferry Terminal during project operation, and because vessel crews would board in the outlying terminal locations, no new vehicle or personnel trips would be required for the operation of the improved facilities. Therefore, the project would not result in any direct impacts to transportation and circulation networks, other than improving regional transit capacity.

The facility improvements would facilitate an increase in water transit service at the Ferry Terminal, thereby increasing passenger use of the transportation and circulation network arriving and departing from the Ferry Terminal. The effects of the increase in passengers are discussed below under Indirect and Cumulative Impacts.

Indirect Impacts

Impact 3.2-1: Potential Traffic Impacts to Study Area Intersections in Existing Conditions

No Action Alternative

Under the No Action Alternative in existing conditions, there would be no changes to water transit service or the Ferry Terminal facility from what currently exists. Therefore, there would be no impacts from the No Action Alternative.

Action Alternative

The project would not generate any inbound or outbound vehicle trips. The only effects to traffic would be from increased pedestrian and bicycle traffic, which could interfere with vehicle traffic turning

movements. According to CCSF guidelines, a decrease in intersection LOS for a signalized intersection from D to E, or from E to F, would be considered significant.

As detailed in the Transportation Impact Study, the additional pedestrian and bicycle traffic results in relatively small changes in the average delay per vehicle at the study intersections during the AM peak hour, when compared to the Existing Condition. The majority of intersections are unaffected, and all intersections experience less than a 6-second increase in average delay. Only one intersection experiences a drop in LOS, going from LOS B to LOS C.

Similarly, during the PM peak hour, the additional pedestrian and bicycle traffic also results in relatively small changes in the average delay per vehicle at the study intersections, when compared to the Existing Condition. As with the AM peak, the majority of intersections are unaffected. All intersections experience less than a 3-second increase in average delay. The intersection at Spear Street and Mission Street would continue to operate at LOS E for Existing Conditions Plus Project.

The intersection of Steuart Street and Market Street is unsignalized and uncontrolled. Because the project would not add any vehicle trips to the roadway network, the number of vehicles traveling through this intersection would not increase. The project would add approximately 1,489 pedestrians to the northbound approach crosswalk, which could have some impact on intersection LOS for vehicular traffic. This crosswalk is approximately 42 feet wide, however, and would be expected to accommodate the increase in pedestrians without an adverse or significant impact on LOS, as detailed in the pedestrian analysis section.

National Environmental Policy Act (NEPA) Determination. Increases in pedestrian and bicycle volumes associated with the project under Existing Conditions would result in only minor increases to traffic delay for the study intersections, which would not be adverse.

California Environmental Quality Act (CEQA) Determination. Increases in pedestrian and bicycle volumes associated with the project under Existing Conditions would result in only minor increases to traffic delay for the study intersections, resulting in a less-than-significant impact.

Impact 3.2-2: Potential Impacts to Transit in Existing Conditions

No Action Alternative

Under the No Action Alternative in existing conditions, there would be no changes to water transit service or the Ferry Terminal facility from what currently exists. Therefore, there would be no impacts from the No Action Alternative.

Action Alternative

As shown in Table 3.2-13, it is estimated that 1,320 AM peak-hour and 1,435 PM peak-hour transit trips would be generated. The project would generate approximately 1,267 arriving and 53 departing transit trips during the AM peak hour, and 58 arriving and 1,377 departing transit trips during the PM peak hour. Transit trips to and from the project would likely use the nearby Muni bus and rail lines for local trips, and the regional lines such as BART (potentially with transfers to/from Muni) for trips outside San Francisco. As described in Section 3.2.2, for local and regional screenline analyses, only additional trips in the peak direction of travel (e.g., inbound toward downtown in the morning and outbound in the afternoon) were analyzed, because those trips are most likely to affect transit operations. From the results of the model and ridership surveys, approximately 191 weekday AM peak-hour inbound trips and 209 weekday PM peak-hour outbound trips would be added to the Muni screenlines. For regional screenlines, 18 inbound trips would be added in the AM peak hour and 20 outbound trips would be added in the PM peak hour.

According to CCSF guidelines, an increase in utilization for a transit line or screenline that results in the transit service operating over the capacity utilization standard (i.e., 85 percent for Muni and 100 percent for regional screenlines) would be considered significant. In addition, if a transit line (or screenline) is already operating over capacity standard (i.e., 85 percent for Muni and 100 percent for regional screenlines), and the project adds more than 5 percent of the total projected riders with the project, the project's impact would be considered significant.

Local Transit

As detailed in the Transportation Impact Study, for the Existing Conditions Plus Project, the additional transit demand from the project would not increase utilization of any Muni screenline or individual line beyond the 85 percent capacity utilization standard.

During the AM peak hour, 1,101 Muni trips would be added; however, only 191 of these trips would be in the peak direction. During the PM peak hour, 1,196 Muni trips would be added; however, only 209 of these trips would be in the peak direction. The maximum number of passengers that would be added to any of the transit corridors analyzed would be 77. The northeast, northwest, and southeast screenlines currently operate at between 50 and 67 percent capacity, and the increase in ridership from the proposed project would only increase the percent utilization by 1 to 4 percent in the peak direction of travel.

During the AM and PM peak hours, the subway lines serving the southwest screenline currently operate above the 85 percent capacity utilization standard. Most of the water transit passengers are arriving at the Ferry Terminal and using transit in the nonpeak direction (i.e., outbound during the AM peak hour and inbound during the PM peak hour). The project would add only 14 trips to the overcrowded subway lines in the southwest corridor during the AM peak hour in the peak direction (i.e., inbound), and 15 trips during the PM peak hour in the peak direction of travel (i.e., outbound). This represents 0.3 percent of the total ridership, which is less than the project contribution threshold of 5 percent. Therefore, although the proposed project would add 191 trips in the AM peak hour and 209 trips in the PM peak hour to the Muni screenlines, the transit-related trips would not significantly contribute to overutilization of Muni screenlines.

In addition, the project's expected increase in ridership and utilization of individual Muni lines for Existing Conditions Plus Project for AM and PM peak hour and direction of travel was analyzed (refer to Table 3.2-18, on the following page). During the AM peak hour, four Muni lines—the K Ingleside, the L Taraval, the T Third Street, and the N Judah—currently operate with over 85 percent of capacity used in the inbound direction under Existing Conditions. The project would add only seven passengers to the K Ingleside line, two passengers to the L Taraval line, 14 passengers to the T Third Street line, and two passengers to the N Judah line in the inbound direction. The passengers added by the project would represents between 0.1 and 1.9 percent of total ridership for these lines, less than the project contribution threshold of 5 percent.

During the PM peak hour, six Muni lines—the F Market and Wharves, the J Church, the K Ingleside, the L Taraval, the T Third Street, and the N Judah—currently operate with more than 85 percent of capacity used in the outbound direction. The project would add only three passengers to the J Church line, eight passengers to the K Ingleside line, two passengers to the L Taraval line, 16 passengers to the T Third Street line, and three passengers to the N Judah line in the outbound direction. The passengers added by the project would represents between 0.1 and 2.1 percent of total ridership in the peak direction of travel for these lines, less than the project contribution threshold of 5 percent.

For the F Market and Wharves, when the full WETA ridership—projected for 2035—occurs, the project would add 71 passengers in the PM peak hour in the peak direction (i.e., southbound along The Embarcadero). This represents 9.0 percent of the total F Market and Wharves ridership, exceeding the project contribution threshold of 5 percent.

Table 3.2-18
Muni Individual Line Utilization for Existing Conditions Plus Project

AM Peak (inbound)	Capacity	Existing Conditions		Existing Conditions Plus Project	
		Ridership	Utilization (%)	Ridership (inc.)[1]	Utilization (%)
1 California	1,071	790	74	796 (6)	74
2 Clement	441	299	68	301 (2)	68
6 Parnassus	441	232	53	236 (4)	54
14 Mission	1,128	506	45	507 (1)	45
14X Mission Express	658	489	74	489 (0)	74
21 Hayes	567	374	66	376 (2)	66
31 Balboa	378	229	61	229 (0)	61
F Market and Wharves[2]	700	289	41	354 (65)	51
J Church	952	745	78	748 (3)	79
K Ingleside	952	**922**	**97**	**929 (7)**	**98**
L Taraval	1,904	**1,861**	**98**	**1,863 (2)**	**98**
M Ocean View	1,666	1038	62	1,040 (2)	62
T Third Street	714	**696**	**97**	**710 (14)**	**100**
N Judah	1,904	**1,768**	**93**	**1,770 (2)**	**93**
PM Peak (outbound)	**Capacity**	**Existing Conditions**		**Existing Conditions Plus Project**	
		Ridership	**Utilization (%)**	**Ridership (inc.)[1]**	**Utilization (%)**
1 California	1,512	939	62	945 (6)	63
2 Clement	378	269	71	271 (2)	72
6 Parnassus	378	196	52	200 (5)	54
14 Mission	1,128	547	48	548 (1)	49
14X Mission Express	658	399	61	399 (0)	61
21 Hayes	504	319	63	321 (2)	64
31 Balboa	378	199	53	199 (0)	53
F Market and Wharves	700	**718**	**103**	**789 (71)**	**113**
J Church	952	**871**	**91**	**874 (3)**	**92**
K Ingleside	833	**819**	**98**	**827 (8)**	**99**
L Taraval	2,142	**1,884**	**88**	**1,886 (2)**	**88**
M Ocean View	1,666	1,194	72	1,196 (2)	72
T Third Street	833	**750**	**90**	**766 (16)**	**92**
N Judah	2142	**2,055**	**96**	**2,058 (3)**	**96**

Source: DKS Associates, 2012.

Notes:

[1] (inc.) refers to the increment added by the project.

[2] For the F Market and Wharves, the "inbound" direction is east along Market Street and north along The Embarcadero. The "outbound" direction is south along The Embarcadero and west along Market Street.

Bolded text indicates that the transit line would operate above 85 percent capacity used, Muni's standard. This does not necessarily indicate that the project has a significant or adverse impact on the transit line.

WETA is assessing several options to reduce potential impacts to the F Market and Wharves however, it is currently unknown if these measures are feasible and whether they would fully mitigate the impacts to the F Market and Wharves. Therefore for the purposes of the EIS/EIR, impacts to the F Market and Wharves would still be considered significant and adverse.

WETA passenger service is expected to occur gradually and over a 20-year period (i.e., between 2015 and 2035) and the operation Muni transit along the Embarcadero could also substantially change during that period should the E Embarcadero line be developed. Therefore, WETA is considering several methods by which to reduce the impact WETA's riders could have on the operation of the F Market and Wharves. WETA will evaluate the feasibility of the following methods of mitigating the impact; and, based on the results of that evaluation, will mitigate the impact to the extent feasible.

- Entering into an agreement with SFMTA for financial compensation, proportionate to the anticipated impacts, for WETA's fair share of operational improvements along the F Market and Wharves corridor.

- Implementation of a shuttle service between the Ferry Terminal and areas north along the Embarcadero during the PM peak hour to reduce demand for the F Market and Wharves when it operates over capacity.

- Monitoring of actual WETA ridership, transit use, and Muni capacity. The monitoring results would be reported to SFMTA, and if they show that ridership from the project has the potential to exceed the capacity utilization standard, WETA will implement such other mitigation methods as may be appropriate at that time, such as financial compensation or a shuttle service.

- Other methods as agreed to by the parties involved (WETA, SFMTA, and the Port).

Each of these mitigation methods is currently being evaluated and, if feasible mitigation is identified, it will be included in the Final EIS/EIR.

Regional Screenline Analysis

The ridership, capacity, and utilization for the regional screenline groupings for the Existing Conditions and the Existing Conditions Plus Project were analyzed. As with Muni screenlines, only additional trips in the peak direction of travel are included.

During the AM peak hour, none of the screenlines are over-utilized. The project would add water transit riders to the East Bay screenline; however, even with the addition of these riders, the East Bay screenline would operate at 79 percent capacity. The project would add 219 BART trips; however, only 18 of these trips would be in the peak direction for the South Bay screenline, which would operate at 65 percent capacity with these additional trips. The project would not add any trips to the North Bay screenline.

During the PM peak hour, none of the screenlines are over-utilized. The project would add water transit riders to the East Bay screenline (on WETA services); however, even with the addition of these riders, the East Bay screenline would operate at 91 percent capacity. The project would add 238 BART trips; however, only 20 of these trips would be in the peak direction for the South Bay screenline. These BART trips originate from the Peninsula, and would be arriving at the Ferry Terminal to travel to the North Bay or East Bay. The inclusion of project-related trips on BART would result in PM peak-hour utilization of 61 percent for the South Bay regional screenline. The project would not add any trips to the North Bay screenline.

Due to the existing regional transit travel patterns and the proximity of the Embarcadero Station to the Ferry Terminal, no other regional transit providers (AC Transit, Caltrain, Golden Gate Transit Bus, or SamTrans) would experience any project-related ridership increase.

BART also provides additional service in the form of longer trains, shorter headways, and longer operating hours for special events such as New Year's Eve, the Fourth of July, Pride Weekend, and Memorial Day weekend. These special events generally occur during off-peak commute hours for water transit services, or during weekends or holidays when the water transit commute demand is not present. Therefore, WETA's commute-based ridership would be unlikely to affect special event service.

The project's regional transit trips would not cause additional regional transit services to operate under overcrowded conditions. Furthermore, the project would not hinder transit operations, nor cause overcrowding on regional transit providers. In fact, the project would expand the options and capacity of regional public transportation. In particular, the project would result in more transit options between the East Bay, Treasure Island, and San Francisco.

NEPA Determination. Increases in transit demand associated with the project under Existing Conditions would result in an increase to local and regional transit volumes. The only increase that would be adverse would be the addition of riders to the F Market and Wharves in the PM peak hour, when WETA's full projected ridership occurs. WETA is committed to mitigating this impact to the extent feasible. However, because the feasibility of mitigation is still being evaluated, the project's impact on the operation of the F Market and Wharves would remain adverse.

CEQA Determination. Increases in transit demand associated with the project under Existing Conditions would result in a minor increase to local and regional transit volumes. The only increase that would be potentially significant would be the addition of riders to the F Market and Wharves in the PM peak hour, when WETA's full projected ridership occurs. WETA is committed to mitigating this impact to the extent feasible. However, because the feasibility of mitigation is still being evaluated, the project's impact on the operation of the F Market and Wharves would remain significant and unavoidable.

Impact 3.2-3: Potential Impacts to Pedestrian Facilities in Existing Conditions

No Action Alternative

Under the No Action Alternative in existing conditions, there would be no changes to water transit service or the Ferry Terminal facility from what currently exists. Therefore, there would be no impacts from the No Action Alternative.

Action Alternative

The project would accommodate an increase in the capacity of the water transit system, which would therefore increase the number of passengers arriving to and departing from the Ferry Terminal. As shown in Table 3.2-13, the majority of passengers would arrive at and depart from the Ferry Terminal by walking. Pedestrian trips to and from the project site would include walking trips, and linked trips to and from local and regional transit stops.

According to CCSF guidelines, causing substantial overcrowding on sidewalks or potentially hazardous conditions for pedestrians would be considered significant. For this analysis, the degradation of the LOS for pedestrian crossing facilities from D to E, or from E to F, would be considered an adverse and significant impact.

The greatest amount of pedestrian crosswalk traffic, as detailed in the Transportation Impact Study, is centered at the intersections of Drumm Street and California Street (No. 4), Drumm Street/Main Street and Market Street (No. 5), Spear Street and Market Street (No. 8), and The Embarcadero and Market Street Northbound and Southbound (No. 16/17) during the AM peak hour; and Drumm Street/Main Street and Market Street (No. 5), Spear Street and Market Street (No. 8), and The Embarcadero and Market Street Northbound and Southbound (No. 16/17) during the PM peak hour.

The crosswalks at The Embarcadero and Market Street Northbound (No. 16) and The Embarcadero and Market Street Southbound (No. 17) would have the greatest increase in the number of project-related pedestrians (1,757 and 1,704 pedestrians, respectively). The number of project-related pedestrians for these two crosswalks is considerably higher than others because they provide a direct path from the Ferry Terminal and Ferry Building to the F Market and Wharves Muni Metro line stop on Justin Herman Plaza; the BART/Muni Embarcadero Station; and Market Street.

Pedestrians would access the Ferry Terminal by either crossing The Embarcadero at one of nine study intersection crosswalks (No. 14 through No. 19B), or by entering the study area on the sidewalk along the eastern side of The Embarcadero. The resulting LOSs for the ten intersections most impacted by the project are given in Table 3.2-19. Compared to the Existing Conditions, the LOS for the crosswalks at intersections 15A, 15B, and 17 drop from LOS A to LOS F during the AM and PM peak hours, due to the narrow widths of these crosswalks. This would be an adverse and potentially significant impact.

Table 3.2-19
Existing Condition Plus Project – Crosswalk LOS

No.	Intersection	AM Peak Hour LOS				PM Peak Hour LOS			
		SB Appr.		NB Appr.		SB Appr.		NB Appr.	
		Area[1]	LOS	Area	LOS	Area	LOS	Area	LOS
14	The Embarcadero and Washington Street	142.9	A	197.8	A	111.5	A	123.6	A
15A	The Embarcadero Midblock at the Ferry Building Southbound	**8.2**	**E**	—	—	**5.9**	**F**	—	—
15B	The Embarcadero Midblock at the Ferry Building Southbound	—	—	**12.9**	**E**	—	—	**8.9**	**E**
16	The Embarcadero and Market Street Northbound	—	—	41.4	B	—	—	26.8	C
17	The Embarcadero and Market Street Southbound	**8.0**	**E**	—	—	**5.6**	**F**	—	—
18A	The Embarcadero and Mission Street West	141.1	A	—	—	71.1	A	—	—
18B	The Embarcadero and Mission Street East	—	—	81.1	A	—	—	140.6	A
19A	The Embarcadero and Howard Street West	224.6	A	—	—	193.6	A	—	—
19B	The Embarcadero and Howard Street East	—	—	313.8	A	—	—	154.9	A

Source: DKS Associates, 2012.

Notes:

[1] Circulation per area is measured as square feet per pedestrian.

Bolded text indicates that the crosswalk operates below the City's standards. This does not necessarily indicate that the project would have a significant or adverse impact to the crosswalk.

LOS = Level of Service
NB = northbound
SB = southbound

It should be noted that although The Embarcadero and Market Street Northbound and The Embarcadero and Market Street Southbound crosswalks generally experience the same number of pedestrians, they would operate with LOS C and LOS F, respectively. This is attributed to the differences in crosswalk width. Although The Embarcadero and Market Street Northbound crosswalk is approximately 83 feet wide, The Embarcadero and Market Street Southbound crosswalk is approximately 38 feet wide, less than half the width. Because crosswalk LOS is measured as square feet per pedestrian, there is a clear difference in LOS even though the two crosswalks accommodate similar numbers of pedestrians.

The increase in passengers may result in more frequent temporary congestion of pedestrian traffic near the Ferry Terminal. Based on the observations of water transit passenger circulation at the Ferry Terminal described in the Pedestrian Conditions subsection of Section 3.2.2, Affected Environment, water transit passengers using the existing Gates B and E as well as new Gates A, F, and G, would not be expected to pass through the Ferry Plaza area; instead, water transit passengers traveling between the Ferry Terminal and origins and destinations in San Francisco would add to the pedestrian demand along the northern and southern perimeters of and within the Ferry Building area. The proposed project circulation improvements in the North and South Basin would improve pedestrian circulation on site, reducing bottlenecks, and the potential that pedestrian flow would be concentrated along the driveway at the southern end of the Ferry Building that also serves as a fire lane. The creation of the Embarcadero Plaza in the South Basin would also allow water transit passengers accessing Gates E, F, and G easier access to the gates, without interfering with Ferry Building patrons or water transit passengers accessing Gates C and D, and reducing crossflow. At the main entrance of the Ferry Building, potential pedestrian traffic congestion may still be increased because water transit passengers traveling to and from the Ferry Terminal would meet people using the Embarcadero Promenade, where cross-flows of pedestrians would meet.

Farther from the Ferry Terminal, pedestrian vehicle, and/or bicycle traffic congestion may occur at crosswalks across The Embarcadero near the Ferry Building, and at curb cuts along the Embarcadero Promenade as the volume of pedestrian activity increases in the area. Near the Ferry Terminal, these locations would include curb cuts at the intersection of The Embarcadero and Washington Street near Pier 1; at The Embarcadero Midblock at the Ferry Building Northbound; near The Embarcadero and Market Street Northbound; near the southern side of the Ferry Building at the F Market and Wharves turn onto The Embarcadero; near The Embarcadero and Mission Street; and at The Embarcadero and Howard Street. However, pedestrian and crosswalk analysis indicates that the project-related pedestrian increases would only result in a potentially adverse and significant impact at two intersections, as discussed above.

As mentioned in the intersection analysis section, the increase of pedestrians at the unsignalized and uncontrolled intersection of Steuart Street and Market Street could be accommodated within the existing crosswalk area.

Additionally, as a part of the proposed project, pedestrian circulation improvements would be constructed in both the North Basin (north of the Ferry Building) and the South Basin (south of the Ferry Building), including improvements of the marginal wharf in the North Basin, creation of the Embarcadero Plaza and East Bayside Promenade in the South Basin, and repairs and improvements to the South Apron of the Agriculture Building, all of which would be Americans with Disabilities Act-compliant.

For the two crosswalks in the Existing Conditions Plus Project that would be potentially adversely and significantly impacted (The Embarcadero Midblock at the Ferry Building Southbound and Northbound [No. 15A/15B] and The Embarcadero and Market Street Southbound [No. 17]), mitigation measures could reduce project impacts. For The Embarcadero Midblock at the Ferry Building Southbound and Northbound (No. 15A/15B), Mitigation Measure TRANS-1 requires that WETA enter into an agreement with SFMTA to modify the pedestrian crosswalk timing, which would improve pedestrian flow without resulting in a drop in intersection LOS. For The Embarcadero and Market Street Southbound (No. 17), Mitigation Measure TRANS-2 requires that WETA enter into an agreement with SFMTA to widen the crosswalk to 72 feet, which would improve pedestrian flow. Both of these mitigation measures are

discussed in more detail Section 3.2.4, Mitigation Measures. Implementation of these measures could reduce the potential impacts at these crosswalks to a not adverse and less-than-significant level. However, SFMTA and the San Francisco Department of Public Works (SFDPW) would need to examine the signal timing progression, pedestrian crossing time requirements, and plans for crosswalk widening in greater detail prior to implementation of the mitigation measures, to determine if the impacts would be fully mitigated. Due to this uncertainty, for the purposes of the EIS/EIR, these impacts would still be considered significant and adverse.

NEPA Determination. Increases in pedestrian circulation associated with the project under Existing Conditions would result in substantial overcrowding for three study area crosswalks, resulting in a potentially adverse impact. Preliminary analysis indicates that Mitigation Measures TRANS-1 and TRANS-2 could reduce the potential impacts. However, SFMTA and SFDPW would need to examine the signal timing progression, pedestrian crossing time requirements, and plans for crosswalk widening in greater detail prior to implementation of the mitigation measures, to determine if the impacts would be fully mitigated. Due to this uncertainty, for the purposes of the EIS/EIR, these impacts would be considered adverse.

CEQA Determination. Increases in pedestrian circulation associated with the project under Existing Conditions would result in substantial overcrowding for three study area crosswalks, resulting in a potentially significant impact. Preliminary analysis indicates that Mitigation Measures TRANS-1 and TRANS-2 would reduce the potential impacts to a less-than-significant level. However, SFMTA and SFDPW would need to examine the signal timing progression, pedestrian crossing time requirements, and plans for crosswalk widening in greater detail prior to implementation of the mitigation measures, to determine if the impacts would be fully mitigated. Due to this uncertainty, for the purposes of the EIS/EIR, these impacts would be considered significant and unavoidable.

Impact 3.2-4: Potential Impacts to Bicycle Facilities in Existing Conditions

No Action Alternative

Under the No Action Alternative in existing conditions, there would be no changes to water transit service or the Ferry Terminal facility from what currently exists. Therefore, there would be no impacts from the No Action Alternative.

Action Alternative

The project would accommodate an increase in the capacity of the water transit system, and therefore the number of passengers approaching and leaving the Ferry Terminal. As shown in Table 3.2-13, 6.4 percent of these passengers would arrive and depart from the Ferry Terminal by bicycling. Like pedestrians, bicyclists would access the Ferry Terminal by either crossing The Embarcadero at one of nine study intersections (No. 14 through No. 19B), or by entering the study area on the sidewalk along the eastern side of The Embarcadero. Bicyclists would be expected to continue to use existing bicycle lanes and routes in the study area. The project would add large bicycle volumes relative to the existing volume at some intersections. However, the project would add fewer than 48 bicyclists in the AM peak hour, and fewer than 54 bicyclists in the PM peak hour to the intersections in the study area. In addition, as noted previously, a mix of bicycles, pedestrians, and automobiles is present along the Embarcadero Promenade and roadway, and the implementation of the project would increase the numbers of pedestrians and bicyclists to this already congested area, potentially increasing curbside congestion.

The project would also improve bicycle circulation and facilities in the area through the construction of circulation improvements (e.g., creation of the Embarcadero Promenade and East Bayside Promenade) that would substantially increase the space available for pedestrian and bicycle circulation in the Ferry Building area, and would include additional bicycle racks as well. In addition, the project includes a wayfinding signage program to be coordinated with the Port that would encourage bicyclists to walk

bicycles across the fire lane/driveway on the southern end of the Ferry Building, and while near the Ferry Terminal. Installing signage encouraging bicyclists to walk bicycles until they are safe to ride would help to reduce the number of pedestrian-bicycle conflicts. The new WETA vessels also include greater bicycle storage capacity onboard, which would allow more commuters to bring their bicycles on board, as they desire, further enhancing regional bicycle commuting access.

Overall, the project would not cause potentially hazardous conditions for bicyclists, or substantially interfere with bicycle accessibility.

NEPA Determination. Overall, the project would not cause potentially hazardous conditions for bicyclists, or substantially interfere with bicycle accessibility. Therefore, the project would not have an adverse impact on bicycle facilities and bicycle travel in the vicinity of the project site.

CEQA Determination. Overall, the project would not cause potentially hazardous conditions for bicyclists, or substantially interfere with bicycle accessibility. Therefore, the project would have a less-than-significant impact on bicycle facilities and bicycle travel in the vicinity of the project site.

Construction Impacts

The No Action Alternative would not result in any physical changes to the Ferry Terminal, and no construction activities would be required. Therefore, there would be no construction impacts to transportation and circulation.

Impact 3.2-5: Potential Impact of Construction-Related Activities on Transportation and Circulation

Construction is estimated to take a maximum of 3.5 years, and typical hours of construction would be on weekdays and weekends between 7:00 AM and 8:00 PM. Most of the fabrication of materials for construction (e.g., new gates, floats, and piles) would take place off site and delivered to the project site primarily via barges. Staging and loading activities would generally occur on site. The majority of construction staging would be conducted from barges in the project area to reduce conflicts with the traffic lanes, parking areas, and sidewalks near the project area. As shown on Figure 2-9, only a portion of the project area would be used for construction activities. Construction activities would not encroach on or block access to the Ferry Plaza, the Ferry Building, or Embarcadero Promenade. The existing fire lane/driveway south of the Ferry Building would not be obstructed during construction, allowing the other businesses and entities in the project area (i.e., Ferry Building tenants, Carnelian by the Bay, Golden Gate Transit, BART) to continue their normal operations during construction.

In the event that a temporary traffic lane, parking lane, or sidewalk closure would be necessary for concrete deliveries—by truck, for example—the closure would be coordinated and reviewed by SFMTA to lessen the effects of the construction-related activities. All traffic-lane closures and sidewalk closures are subject to review and approval by SFDPW and the Transportation Advisory Staff Committee. Signage with directions to the offices and businesses in the project area would be provided, if necessary, to ensure that effects on normal business operations would be minimized. Also, the project contractor would have to coordinate with the Street Operations and Special Events Office at Muni to coordinate the schedule of construction activities and to decrease any potential impacts construction activities may have on transit services. Regular communication between the project sponsor, WETA, and CCSF would ensure that transportation disruptions during the construction phase would be kept at a minimum.

Truck deliveries would vary depending on the construction activity taking place, as described in Section 2.4.7, Construction Deliveries and Staffing. During the peak construction activities, it is assumed that up to 15 to 20 trucks would access the site daily to make for concrete deliveries—for example, for South Basin circulation improvements. It is estimated that the construction trucks would use nearby

U.S. Highway 101 and I-80 to reach available disposal sites. The primary route to reach U.S. Highway 101 and I-80 would include The Embarcadero, Howard Street, Folsom Street, First Street, Fourth Street, and Fifth Street. Truck staging, loading activities, and unloading activities would generally occur on site. The presence of construction trucks would result in the temporary decrease in roadway capacities due to the slower speeds and wider turning radii of construction trucks, and may affect vehicular and transit operations during this time; however, the construction phase and presence of construction trucks would be temporary and intermittent.

Between 4 and 25 construction workers would be assigned to tasks at the project site on a daily basis, depending on the construction activity taking place, as described in Section 2.4.7, Construction Deliveries and Staffing. It is expected that most construction workers would use public transit to access the project site; however, two or three parking spaces would be provided on site within the construction zone. Any other parking demand, which would be minimal, would be accommodated via nearby parking garages and lots. Meter parking and residential parking zones near the project site would preclude all-day on-street parking by construction workers in residential areas or immediately adjacent to the project area. The available parking supply would be able to accommodate the daily number of construction workers.

Therefore, impacts to the transportation and circulation network would not be adverse, and would be less than significant.

However, to further reduce the potential temporary disruptions to transportation and circulation, consistent with construction management best practices, WETA will implement Mitigation Measure TRANS-3, Construction Circulation Management. WETA will meet with the Traffic Engineering Division of SFMTA, the SFFD, Muni, and the San Francisco Planning Department to determine the best methods and avoidance measures to minimize traffic congestion and potential negative effects to pedestrian or bicycle circulation in the project area during construction of the proposed project. Additional avoidance measures that could be implemented include encouraging carpooling and transit use for construction workers, managing construction traffic on Mission Street to avoid peak-period congestion, informing the public of construction schedules and activities, and posting of wayfinding signage in the project area for pedestrians and bicycles.

NEPA Determination. Project construction would not have an adverse impact on transportation and circulation. However, WETA would implement Mitigation Measure TRANS-3 to further reduce the potential temporary disruptions to transportation and circulation.

CEQA Determination. Project construction would have a less-than-significant impact on transportation and circulation. However, WETA would implement Mitigation Measure TRANS-3 to further reduce the potential temporary disruptions to transportation and circulation.

Cumulative Impacts

Impact 3.2-6: Potential Cumulative Traffic Impacts to Study Area Intersections in Future (2035) Conditions

No Action Alternative

Under the No Action Alternative (i.e., Future [2035] with the No Project Alternative), no new gates or additional boarding capacity would be provided to accommodate new WETA services, or the expansion of existing WETA services. Only increases in passenger and water transit vessel arrivals that could be accommodated with the existing facilities at the Ferry Terminal (i.e., at existing Gate B and Gate E) would occur as a part of the Future (2035) with the No Project Alternative. The existing infrastructure available to WETA at the Ferry Terminal could accommodate up to 7,800 WETA passengers per weekday; 2,339 passengers during the AM peak period, and 2,641 passengers during the PM peak period. For the purposes

of assessing the project's potential impacts in 2035, the Future (2035) Plus Project is compared to the Future (2035) with the No Project Alternative (and analyzed below under the Action Alternative). This comparison most accurately assesses the project's effects on the traffic, pedestrian, transit, and bicycle circulation, and enables an evaluation of the project's incremental effect on future conditions.

Action Alternative

Similar to the Existing Conditions Plus Project, LOS calculations were performed at the 19 study intersections for the weekday AM and PM peak hours for the Future (2035) Plus Project Condition, as detailed in the Transportation Impact Study. Figure 3.2-6 illustrates the traffic volumes for the study intersections expected in 2035. The project would not generate any vehicle trips during either peak hour, but an intersection LOS analysis has been completed to analyze the effect of pedestrians and bicycle traffic on intersection operations.

As detailed in the Transportation Impact Study, the project-related additional pedestrian and bicycle traffic results in relatively small changes during the AM peak hour in the average delay per vehicle at the study intersections, when compared to the Future (2035) with the No Project Alternative. The majority of intersections are unaffected, and all intersections experience less than a 7-second increase in average delay. Only one intersection (Drumm Street and Clay Street [No. 2]) experiences a drop in LOS, going from LOS B to LOS C. The intersection at The Embarcadero and Howard Street (No. 19) has an LOS E for Future (2035) Plus Project; however, the increased pedestrian and bicycle volumes due to the project do not result in a change in the expected delay, or a degradation of LOS.

For the PM peak hour, the additional pedestrian and bicycle traffic also results in relatively small changes in the average delay per vehicle at the study intersections, when compared to Future (2035) with the No Project Alternative. As with the AM peak, the majority of intersections are unaffected. All intersections experience less than a 3-second increase in average delay.

As mentioned previously, the intersection of Steuart Street and Market Street is unsignalized and uncontrolled, and cannot be analyzed from a quantitative standpoint. Because the project would not add any vehicle trips to the roadway network, the number of vehicles traveling through this intersection would not increase. The project would add approximately 1,338 pedestrians to the northbound approach crosswalk, but this crosswalk is approximately 42 feet wide and would be expected to accommodate the increase in pedestrians from an LOS standpoint, as detailed in the pedestrian analysis section.

Increases in pedestrian and bicycle volumes associated with the project under Future (2035) Plus Project would result in only minor increases to traffic delay at study area intersections.

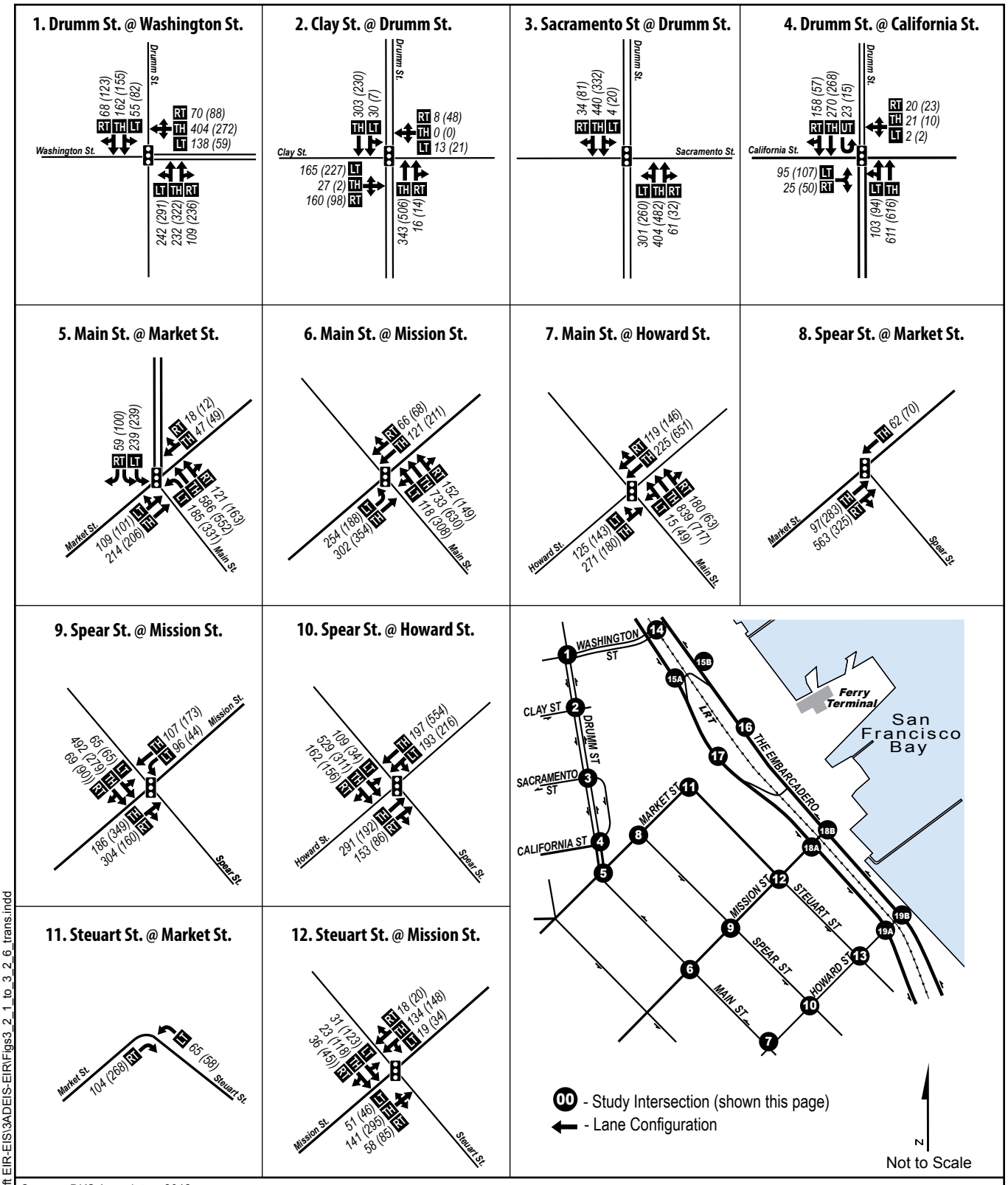
NEPA Determination. Increases in pedestrian and bicycle volumes associated with the project under Future (2035) Conditions would result in only minor increases to traffic delay for the study intersections, which would not be adverse.

CEQA Determination. Increases in pedestrian and bicycle volumes associated with the project under Future (2035) Conditions would result in only minor increases to traffic delay for the study intersections, resulting in a less-than-significant impact.

Impact 3.2-7: Potential Cumulative Impacts to Transit in Future (2035) Conditions

No Action Alternative

Under the No Action Alternative (i.e., Future [2035] with the No Project Alternative), no new gates or additional boarding capacity would be provided to accommodate new WETA services, or the expansion



Source: DKS Associates, 2012.

FUTURE (2035) CONDITIONS
PEAK HOUR TRAFFIC VOLUMES

Downtown San Francisco
Ferry Terminal Expansion Project
28067812 San Francisco, California

FIGURE 3.2-6 (SHEET 1 OF 2)

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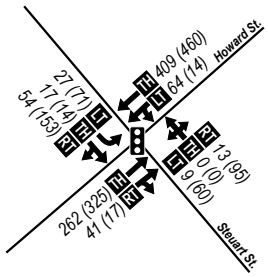
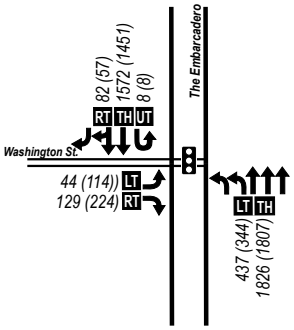
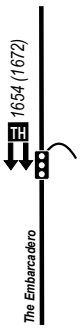
13. Howard St. @ Steuart St.



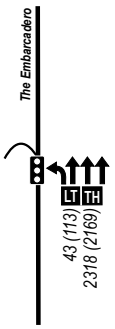
14. The Embarcadero @ Washington St.



15A. The Embarcadero SB Midblock Ferry Building



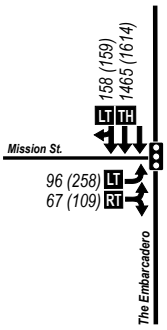
15B. The Embarcadero NB Midblock Ferry Building



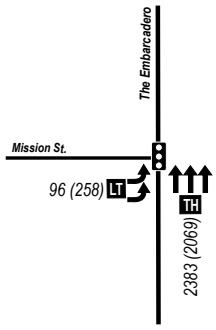
16. Market St. @ The Embarcadero NB

17. Market St. @ The Embarcadero SB

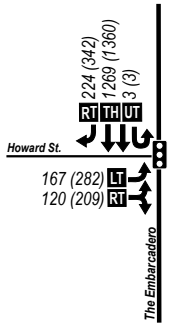
18A. The Embarcadero SB @ Mission St.



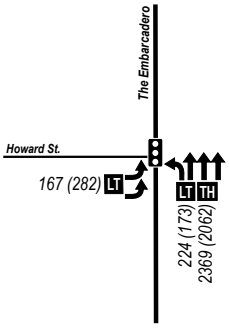
18B. The Embarcadero NB @ Mission St.

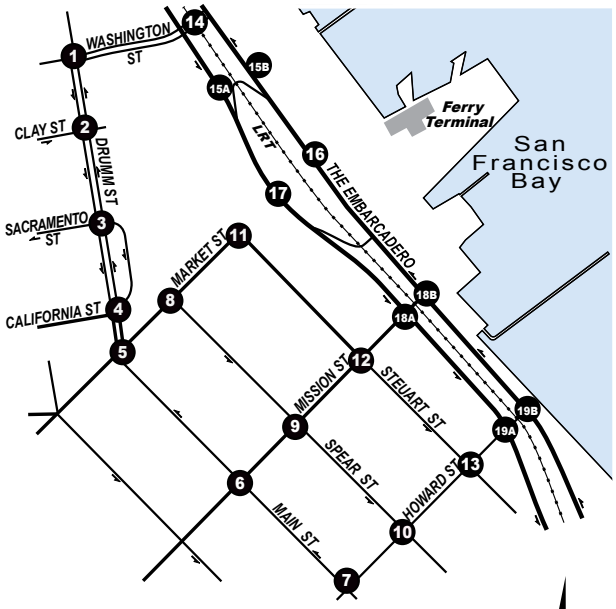


19A. The Embarcadero SB @ Howard St.



19B. The Embarcadero NB @ Howard St.





Source: DKS Associates, 2012.

FUTURE (2035) CONDITIONS PEAK HOUR TRAFFIC VOLUMES

Downtown San Francisco
Ferry Terminal Expansion Project
28067812 San Francisco, California

FIGURE 3.2-6 (SHEET 2 OF 2)

of existing WETA services. Only increases in passenger and water transit vessel arrivals that could be accommodated with the existing facilities at the Ferry Terminal (i.e., at existing Gate B and Gate E) would occur as a part of the Future (2035) with the No Project Alternative. The existing infrastructure available to WETA at the Ferry Terminal could accommodate up to 7,800 WETA passengers per weekday; 2,339 passengers during the AM peak period, and 2,641 passengers during the PM peak period. For the purposes of assessing the project's potential impacts in 2035, the Future (2035) Plus Project is compared to the Future (2035) with the No Project Alternative (and analyzed below under the Action Alternative). This comparison most accurately assesses the project's effects on the traffic, pedestrian, transit, and bicycle circulation, and enables an evaluation of the project's incremental effect on future conditions.

Action Alternative

As with the Existing Conditions analysis, an increase in utilization for a transit line or screenline that results in the transit service operating over the capacity utilization standard (i.e., 85 percent for Muni and 100 percent for regional screenlines) for the Future (2035) Plus Project Condition would be considered adverse and significant. In addition, if a transit line (or screenline) is already operating over capacity standard (i.e., 85 percent for Muni and 100 percent for regional screenlines), and the project adds more than 5 percent of the total projected riders with the project, the project's impact would be considered adverse and significant. For local and regional screenline analysis, only additional trips in the peak direction of travel were considered.

Local Transit

As detailed in the Transportation Impact Study, for the Future (2035) Plus Project, the additional transit demand from the project would not increase utilization of any Muni screenline or individual line beyond the 85 percent capacity utilization standard. During the AM peak hour, 1,059 Muni trips would be added; however, only 198 of these trips would be in the peak direction. During the PM peak hour, 1,145 Muni trips would be added; however, only 218 of these trips would be in the peak direction. The maximum number of passengers that would be added to any of the transit corridors analyzed would be 26 passengers (added to the Kearny/Stockton Transit Corridor). The maximum number of passengers that would be added to any of the screenlines analyzed would be 120 passengers (added to the Northeast Screenline).

During the AM and PM peak hours, several of the screenlines and transit corridors would operate above 85 percent utilization even without implementation of the project. However, the project's incremental contribution to these already overcrowded screenlines and transit corridors would be less than 4 percent—below the 5 percent increase threshold.

As shown on Table 3.2-20 (on the following page), several individual Muni lines would also be expected to operate above the 85 percent utilization standard in the peak direction of travel during both the AM peak hour and PM peak hour, even without implementation of the project.

In the AM peak hour, six Muni lines would operate over capacity, even without implementation of the proposed project. However, the project would add only a small number of trips to these lines (fewer than 13 passengers). The project-related increase in demand to these lines would be between 0.09 percent and 1.3 percent, less than the 5 percent project-related increase-in-demand threshold.

In the PM Peak Hour, nine Muni lines would operate over capacity, even without implementation of the proposed project. However, the project-related increase in demand for these lines would be between 0.08 percent and 4.9 percent, less than the 5 percent project-related increase-in-demand threshold.

Therefore, although the project would result in an additional 198 Muni trips in the peak direction in the AM peak hour and 218 Muni trips in the PM peak hour in the peak direction of travel, the transit-related trips would not significantly contribute to overutilization of Muni services.

Table 3.2-20
Muni Individual Line Ridership and Capacity for Future (2035) Conditions

AM Peak	Capacity	Future (2035) with the No Project Alternative		Future (2035) Plus Project	
		Ridership	Utilization (%)	Ridership (inc.)[1]	Utilization (%)
1 California	1,135	**1,074**	**95**	**1,078 (4)**	**95**
2 Clement	467	**407**	**87**	**409 (2)**	**88**
6 Parnassus	348	**306**	**88**	**310 (4)**	**89**
14 Mission	2,008	653	33	654 (1)	33
14X Mission Express	1,171	631	54	631 (0)	54
21 Hayes	601	509	85	510 (2)	85
31 Balboa	401	311	78	311 (0)	78
E Embarcadero[2]	280	209	75	223 (14)	80
F Market and Wharves[3]	959	364	38	410 (46)	43
J Church	1,304	939	72	942 (3)	72
K Ingleside	1,304	**1,162**	**89**	**1,168 (6)**	**90**
L Taraval	2,608	**2,345**	**90**	**2,347 (2)**	**90**
M Ocean View	2,282	1,308	57	1,310 (2)	57
T Third Street	978	**877**	**90**	**889 (12)**	**91**
N Judah	2,608	2,228	85	2,230 (2)	85
PM Peak	**Capacity**	**Future (2035) with the No Project Alternative**		**Future (2035) Plus Project**	
		Ridership	**Utilization**	**Ridership (inc.)**	**Utilization**
1 California	1,527	**1,352**	**89**	**1,357 (5)**	**89**
2 Clement	382	**387**	**101**	**389 (2)**	**102**
6 Parnassus	363	247	68	251 (4)	69
14 Mission	1,072	706	66	707 (1)	66
14X Mission Express	625	515	82	515 (0)	82
21 Hayes	509	**459**	**90**	**461 (2)**	**91**
31 Balboa	382	287	75	287 (0)	75
E Embarcadero	280	135	48	151 (16)	54
F Market and Wharves	854	**948**	**111**	**997 (49)**	**117**
J Church	1,161	**1,150**	**99**	**1,153 (3)**	**99**
K Ingleside	1,016	**1,081**	**106**	**1,087 (6)**	**107**
L Taraval	2,613	**2,487**	**95**	**2,489 (2)**	**95**
M Ocean View	2,033	1,576	78	1,578 (2)	78
T Third Street	1,016	**990**	**97**	**1,003 (13)**	**99**
N Judah	2,613	**2,713**	**104**	**2,715 (2)**	**104**

Source: DKS Associates, 2012.

Notes:

[1] (inc.) refers to the increment added by the project

[2] The "inbound" direction for the E Embarcadero is north along The Embarcadero, and the "outbound" direction is south along The Embarcadero.

[3] For the F Market and Wharves, the "inbound" direction is east along Market Street and north along The Embarcadero. The "outbound" direction is south along The Embarcadero and west along Market Street.

Bolded text indicates that the transit line would operate above 85 percent capacity used, Muni's threshold. This does not necessarily indicate that the project has a significant or adverse impact on the transit line.

The 2035 baseline capacities and ridership have been projected based on the existing and 2035 screenline numbers provided by SFMTA. The ridership increment from the project is based on estimates of transit access or egress for project-generated water transit passengers, based on the WETA model and ridership survey estimates. The percent changes between the existing and 2035 screenline numbers were applied to individual transit line numbers based on the respective screenline in which each individual line is grouped.

Regional Screenline Analysis

The ridership, capacity, and utilization for the regional screenline groupings for Future (2035) Plus Project Conditions were analyzed. As with Muni screenlines, only additional trips in the peak direction of travel are included.

During the AM peak hour, the East Bay and North Bay inbound screenlines are over-utilized, operating at 127 percent and 121 percent capacity, respectively. The only trips that would be added to the East Bay screenline during the AM peak hour would be water transit trips on WETA service. The project would not add any trips to the North Bay screenline during the AM peak hour. The project would add 16 South Bay BART trips during the AM peak hour in the peak direction. With these trips, the South Bay screenline would operate at 64 percent utilization, and the additional trips associated with the project would result in less than a 5 percent increase of the overall AM peak-hour demand.

During the PM peak hour, East Bay and North Bay outbound screenlines are overutilized, operating at 104 percent and 126 percent capacity, respectively. The only trips that would be added to the East Bay screenline during the PM peak hour would be water transit trips on WETA service. The project would not add any trips to the North Bay screenline during the PM peak hour. The project would add 18 South Bay BART trips during the PM peak hour in the peak direction. With these trips, the South Bay screenline would operate at 55 percent utilization, and the additional trips associated with the project would result in less than a 5 percent increase in overall PM peak-hour demand.

As described under Impact 3.2-2, WETA's commute-based ridership would also be unlikely to affect BART's special event service, which generally occurs after hours and on weekends.

NEPA Determination. Increases in transit demand associated with the project under Future (2035) Conditions would result in increases to local and regional transit volumes. However, all increases would be below the thresholds of significance, and therefore would not adversely affect transit services.

CEQA Determination. Increases in transit demand associated with the project under Future (2035) Conditions would result in a minor increase to local and regional transit volumes. All increases would be below the thresholds of significance, resulting in a less-than-significant impact to transit services.

Impact 3.2-8: Potential Cumulative Impacts to Pedestrian Facilities in Future (2035) Conditions

No Action Alternative

Under the No Action Alternative (i.e., Future [2035] with the No Project Alternative), no new gates or additional boarding capacity would be provided to accommodate new WETA services, or the expansion of existing WETA services. Only increases in passenger and water transit vessel arrivals that could be accommodated with the existing facilities at the Ferry Terminal (i.e., at existing Gate B and Gate E) would occur as a part of the Future (2035) with the No Project Alternative. The existing infrastructure available to WETA at the Ferry Terminal could accommodate up to 7,800 WETA passengers per weekday; 2,339 passengers during the AM peak period, and 2,641 passengers during the PM peak period. For the purposes of assessing the project's potential impacts in 2035, the Future (2035) Plus Project is compared to the Future (2035) with the No Project Alternative (and analyzed below under the Action Alternative). This comparison most accurately assesses the project's effects on the traffic, pedestrian, transit, and bicycle circulation, and enables an evaluation of the project's incremental effect on future conditions.

Action Alternative

As described for Existing Conditions, the project would result in an increase in pedestrian activity in the study area.

Pedestrians would access the Ferry Terminal by either crossing The Embarcadero at ten of the study intersections (No. 14 through No. 19), or by entering the area on the sidewalk along the eastern side of The Embarcadero. The resulting LOS with and without project pedestrian volumes for the ten crosswalks most impacted by the project are given in Table 3.2-21.

Table 3.2-21
Future (2035) Conditions Crosswalk LOS

No.	Intersection	AM Peak Hour LOS				PM Peak Hour LOS			
		SB Approach		NB Approach		SB Approach		NB Approach	
		Future (2035) with the No Project Alternative	Future (2035) Plus Project	Future (2035) with the No Project Alternative	Future (2035) Plus Project	Future (2035) with the No Project Alternative	Future (2035) Plus Project	Future (2035) with the No Project Alternative	Future (2035) Plus Project
14	The Embarcadero and Washington Street	A	A	A	A	A	A	A	A
15A	The Embarcadero Midblock at the Ferry Building Southbound	D	**F**	—	—	D	**F**	—	—
15B	The Embarcadero Midblock at the Ferry Building Northbound	—	—	C	**F**	—	—	D	**F**
16	The Embarcadero and Market Street Northbound	—	—	A	C	—	—	B	D
17	The Embarcadero and Market Street Southbound	**F**	**F**	—	—	**F**	**F**	—	—
18A	The Embarcadero and Mission Street West	A	A	—	—	A	B	—	—
18B	The Embarcadero and Mission Street East	—	—	A	A	—	—	A	A
19A	The Embarcadero and Howard Street West	A	A	—	—	A	A	—	—
19B	The Embarcadero and Howard Street East	—	—	A	A	—	—	A	A

Source: DKS Associates, 2012.

Notes:

Bolded text indicates that the crosswalk operates below the City's standards. This does not necessarily indicate that the project would have a significant or adverse impact to the crosswalk.

LOS = Level of Service
NB Approach = Northbound vehicular approach
SB Approach = Southbound vehicular approach

Under Future (2035) Plus Project Conditions, the project would add pedestrian volumes at The Embarcadero and Market Southbound (No. 17), which would already operate at LOS F. The pedestrian volumes associated with the project would also cause the LOS for the crosswalks at The Embarcadero

Midblock at the Ferry Building Southbound and Northbound (No. 15A/15B) to drop to LOS F during the AM and PM peak hours, an adverse and potentially significant impact.

As mentioned in the intersection analysis section, the increase of pedestrians at the unsignalized and uncontrolled intersection of Steuart Street and Market Street could be accommodated within the existing crosswalk area.

As also described for the Existing Conditions, for the Future (2035) Plus Project, the same potential for additional congestion and conflicts between bicycles, pedestrians, and automobiles along the Embarcadero Promenade and roadway would exist. In addition, BART's Ferry Plaza Barrier Project would be expected to change the pedestrian circulation patterns in the project area in the future. However, these changes would affect pedestrian circulation on the Ferry Plaza; and, as described in the Pedestrian Conditions subsection of Section 3.2.2, Affected Environment, passengers using WETA's existing and new water transit services would not be expected to use the Ferry Plaza area for access or egress to the gates. The proposed project would also improve pedestrian circulation conditions with new pedestrian and bicycle enhancements constructed in the Ferry Terminal area.

For the two crosswalks that would be potentially adversely impacted (The Embarcadero Midblock at the Ferry Building Southbound and Northbound [No. 15A/15B] and The Embarcadero and Market Street Southbound [No. 17]), mitigation measures could reduce project impacts. For The Embarcadero Midblock at the Ferry Building Southbound and Northbound (No. 15A/15B), Mitigation Measure TRANS-1 requires that WETA enter into an agreement with SFMTA to modify the pedestrian crosswalk timing, which would improve pedestrian flow without resulting in a drop in intersection LOS. For The Embarcadero and Market Street Southbound (No. 17), Mitigation Measure TRANS-2 requires that WETA enter into an agreement with SFMTA to widen the crosswalk to 72 feet, which would improve pedestrian flow. Both of these mitigation measures are discussed in more detail Section 3.2.4, Mitigation Measures.

NEPA Determination. Increases in pedestrian circulation associated with the project under Future (2035) Conditions would result in substantial overcrowding for three study area crosswalks, resulting in a an adverse impact. Preliminary analysis indicates that Mitigation Measures TRANS-1 and TRANS-2 would reduce the potential impacts. However, SFMTA and SFDPW would need to examine the signal timing progression, pedestrian crossing time requirements, and plans for crosswalk widening in greater detail prior to implementation of the mitigation measures, to determine if the impacts would be fully mitigated. Due to this uncertainty, for the purposes of the EIS/EIR, these impacts would still be considered adverse.

CEQA Determination. Increases in pedestrian circulation associated with the project under Future (2035) Plus Project conditions would result in substantial overcrowding for three study area crosswalks, resulting in a potentially significant impact. Preliminary analysis indicates that Mitigation Measures TRANS-1 and TRANS-2 would reduce the potential impacts to a less-than-significant level. However, SFMTA and SFDPW would need to examine the signal timing progression, pedestrian crossing time requirements, and plans for crosswalk widening in greater detail prior to implementation of the mitigation measures, to determine if the impacts would be fully mitigated. Due to this uncertainty, for the purposes of the EIS/EIR, these impacts would be considered significant and unavoidable.

Impact 3.2-9: Potential Cumulative Impacts to Bicycle Facilities in Future (2035) Conditions

No Action Alternative

Under the No Action Alternative (i.e., Future [2035] with the No Project Alternative), no new gates or additional boarding capacity would be provided to accommodate new WETA services, or the expansion

of existing WETA services. Only increases in passenger and water transit vessel arrivals that could be accommodated with the existing facilities at the Ferry Terminal (i.e., at existing Gate B and Gate E) would occur as a part of the Future (2035) with the No Project Alternative. The existing infrastructure available to WETA at the Ferry Terminal could accommodate up to 7,800 WETA passengers per weekday; 2,339 passengers during the AM peak period, and 2,641 passengers during the PM peak period. For the purposes of assessing the project's potential impacts in 2035, the Future (2035) Plus Project is compared to the Future (2035) with the No Project Alternative (and analyzed below under the Action Alternative). This comparison most accurately assesses the project's effects on the traffic, pedestrian, transit, and bicycle circulation, and enables an evaluation of the project's incremental effect on future conditions.

Action Alternative

The impacts to bicycle facilities and bicycle accessibility in the Future (2035) Plus Project Condition would be similar to those described for Existing Conditions. According to CCSF guidelines, causing potentially hazardous conditions for bicyclists or substantially interfering with bicycle accessibility would be considered potentially adverse and significant. Bicyclists would access the Ferry Terminal by either crossing The Embarcadero at ten of the study intersections (No. 14 through No. 19), or by entering the area on the sidewalk along the eastern side of The Embarcadero. Bicyclists are expected to continue to use existing bicycle lanes and routes in the study area. The project may add large bicycle volumes relative to existing volumes; however, the project would add fewer than 50 bicyclists in either the AM or PM peak hour to the study intersections.

As also described for the Existing Conditions, for the Future (2035) Plus Project, the same potential for additional congestion between bicycles, pedestrians, and automobiles along the Embarcadero Promenade and roadway would exist. However, the project would also improve conditions with new pedestrian and bicycle enhancements constructed in the Ferry Terminal area; and new WETA vessels also include greater bicycle storage capacity onboard, allowing more commuters to bring their bicycles onboard as they desire, further enhancing regional bicycle commuting access.

NEPA Determination. Overall, the project would not cause potentially hazardous conditions for bicyclists, or substantially interfere with bicycle accessibility. Therefore, the project would not adversely impact bicycle facilities and bicycle travel in the vicinity of the project site.

CEQA Determination. Overall, the project would not cause potentially hazardous conditions for bicyclists, or substantially interfere with bicycle accessibility. Therefore, the project would have a less-than-significant impact on bicycle facilities and bicycle travel in the vicinity of the project site.

3.2.4 Mitigation Measures

Mitigation Measure TRANS-1: Implement The Embarcadero Midblock at the Ferry Building Southbound and Northbound (No. 15A/15B) Intersection Adjustments

WETA will enter into an agreement with SFMTA to modify the intersection signal timing for The Embarcadero Midblock at the Ferry Building Southbound and Northbound (No. 15A/15B), to remove the northbound-southbound movement (No. 9); and distribute the time to the northbound movement (Turning Movement No. 2/Turning Movement No. 5) and southbound movement (Turning Movement No. 10), to allow for longer crossing times for pedestrians. This adjustment would result in the LOS for the crosswalk to be improved to LOS D for the respective AM and PM peak hours, without causing intersection LOS to drop to an unacceptable level. SFMTA has discretion over the specific timing adjustments, and the timing of the implementation of any changes affecting the transportation network in San Francisco.

Mitigation Measure TRANS-2: Implement The Embarcadero and Market West (No. 17) Crosswalk Adjustments

WETA will enter into an agreement with SFMTA to widen the pedestrian crosswalk at The Embarcadero and Market Street Southbound (No. 17) to a minimum of 72 feet. This adjustment would result in the LOS for the crosswalk to be improved to LOS D, without causing a drop in intersection LOS for traffic.

The existing crosswalk at this location is 42 feet in width; therefore, it would require a 30-foot widening (for a minimum width of 72 feet). However, there are a number of signs, poles, and other street furniture located north and south of the crosswalk on either side of the roadway that could have to be relocated to allow the crosswalk to be widened. These include:

- Along the western side of The Embarcadero, 2.5 feet north of the crosswalk, there is a traffic signal; and 15 feet north of the crosswalk, there is a manhole.
- Along the western side of The Embarcadero, south of the crosswalk, there is a pedestrian crossing signal 2 feet from the crosswalk; a newspaper vending box 8 to 16 feet from the crosswalk; a street light 20 feet from the crosswalk; a "no parking" sign 24 feet from the crosswalk; and a traffic signal 30 feet from the crosswalk. A tree is located approximately 44 feet south of the crosswalk.
- Along the eastern side The Embarcadero, a traffic signal and pedestrian call button are located 1 foot north of the crosswalk.
- Along the eastern side The Embarcadero, a pedestrian crossing signal is located at the southern edge of the crosswalk, a decorative spherical bollard is 23 feet south of the crosswalk, and a traffic signal is 32 feet south of the crosswalk.

SFMTA has discretion over the specific adjustments and the timing of the implementation of any changes affecting the transportation network in San Francisco, and SFDPW will be required to review and approve any relocation of manholes.

Mitigation Measure TRANS-3: Construction Circulation Management

WETA will meet with the Traffic Engineering Division of SFMTA, the SFFD, Muni, and the San Francisco Planning Department to determine the best methods and avoidance measures to minimize traffic congestion and potential negative effects to pedestrian or bicycle circulation in the project area during construction of the proposed project. Additional avoidance measures that could be implemented include encouraging carpooling and transit use for construction workers, managing construction traffic on Mission Street to avoid peak-period congestion, informing the public of construction schedules and activities, and posting of wayfinding signage in the project area for pedestrians and bicycles.

3.3 LAND USE AND LAND USE PLANNING

3.3.1 Introduction to the Analysis

This section describes the existing land uses in the project area; presents the land use planning context for development at the Downtown San Francisco Ferry Terminal (Ferry Terminal), including applicable plans and policies, and evaluates the potential land use impacts from implementation of the No Action and the Action Alternative. As described below, the proposed project would have less-than-significant impacts on land use.

3.3.2 Affected Environment

This section describes existing land uses and land use planning within the project area and the study area. It also provides a regulatory framework describing policies and plans applicable to land uses within the study area. For the purpose of this analysis, the project's study area encompasses the project area and the parcels within approximately 1,000 feet of the project site.

Existing Setting

Land Use

Study Area

The proposed project would be within downtown San Francisco's diverse mix of urban uses. Although the downtown area is dominated by high-rise buildings, the area closest to the water and in the study area is characterized by smaller scale commercial structures and large open spaces, such as Justin Herman Plaza (see Section 3.4, Parklands and Recreation, for discussion of area parklands and open spaces). The northern part of the study area is adjacent to Golden Gateway, a waterfront neighborhood containing low- to high-rise residential and commercial development. To the west and south of the project area is the downtown commercial district.

Project Area

Land uses in the project area include commercial, recreation, open space, public transportation, and maritime activities.

The San Francisco Ferry Building (Ferry Building) is three stories tall and includes 65,000 square feet of retail space at the ground level; and 175,000 square feet at the second and third levels, which house office space and the hearing room of the San Francisco Port Commission. The area in front of the Ferry Building is used on Tuesdays, Thursdays, and Saturdays for the Ferry Plaza Farmers Market. Other events are sometimes held in the area in front of the Ferry Building as well. On the San Francisco Bay side of the Ferry Building are a 30-foot-wide wharf and the Ferry Plaza, which are also used on Saturdays by the Ferry Plaza Farmers Market. The Ferry Plaza provides a mix of public services, including the Golden Gate Ferry Terminal; public access on top of the Golden Gate Terminal and along the southern and eastern sides of the Plaza; Carnelian by the Bay, a restaurant and lounge; and open space in the center of the plaza. Bay Area Rapid Transit (BART) also has facilities located on and beneath the Ferry Plaza, and retains approval authority over uses on and near the Ferry Plaza. The Ferry Building and the Ferry Plaza are leased from the Port of San Francisco (Port) and managed by a private entity, Equity Office Partners.

The project area also includes active water transit gates: the Golden Gate Ferry Terminal (Gates C and D), Gate B, and Gate E.

South of Gate E, on Pier 2, is a restaurant that operates on a short-term lease from the Port. The Ferry Station Post Office Building, also known as the Agriculture Building, is to the south of the Ferry Building. It currently contains a mix of office spaces, including Amtrak, which operates a ticket window from this location.

The City and County of San Francisco (CCSF), through the Port, owns and manages the uses within the project area. In addition, much of the project area is within the jurisdiction of the San Francisco Bay Conservation and Development Commission (BCDC). BCDC and the Port have developed joint plans and policies related to the use and development of the project area, the San Francisco Waterfront Special Area Plan (SAP) (BCDC, 2000).

General Plan

CCSF and the Port manage the project site according to several plans and policies identified in the Regulatory Setting below.

Study Area

The area adjacent to the north of the project is designated as General Commercial/Public Trust and General Commercial; the area across The Embarcadero to the northwest is designated as High-Density Residential and General Commercial; the area to the west is designated as Public and Downtown Office; and the area to the south is designated as Public and High-Density Residential (SF Planning, 2003). To the east of project area is San Francisco Bay. See Figure 3.3-1 for area land uses.

Project Area

The project area is within General Commercial/Public Trust, as designated by the Ferry Building Subarea Generalized Land Use Map (SF Planning, 2003).

Zoning

Study Area

The area adjacent to the north of the project is composed of C-2 (Community Business); across The Embarcadero to the northwest is RC-4 (High-Density [1 unit per 200 square feet]); to the west is P (Public) and C-3-O (Downtown Office); and to the south is C-2 and P. To the east of project area is San Francisco Bay. See Figure 3.3-1 for area zoning.

Project Area

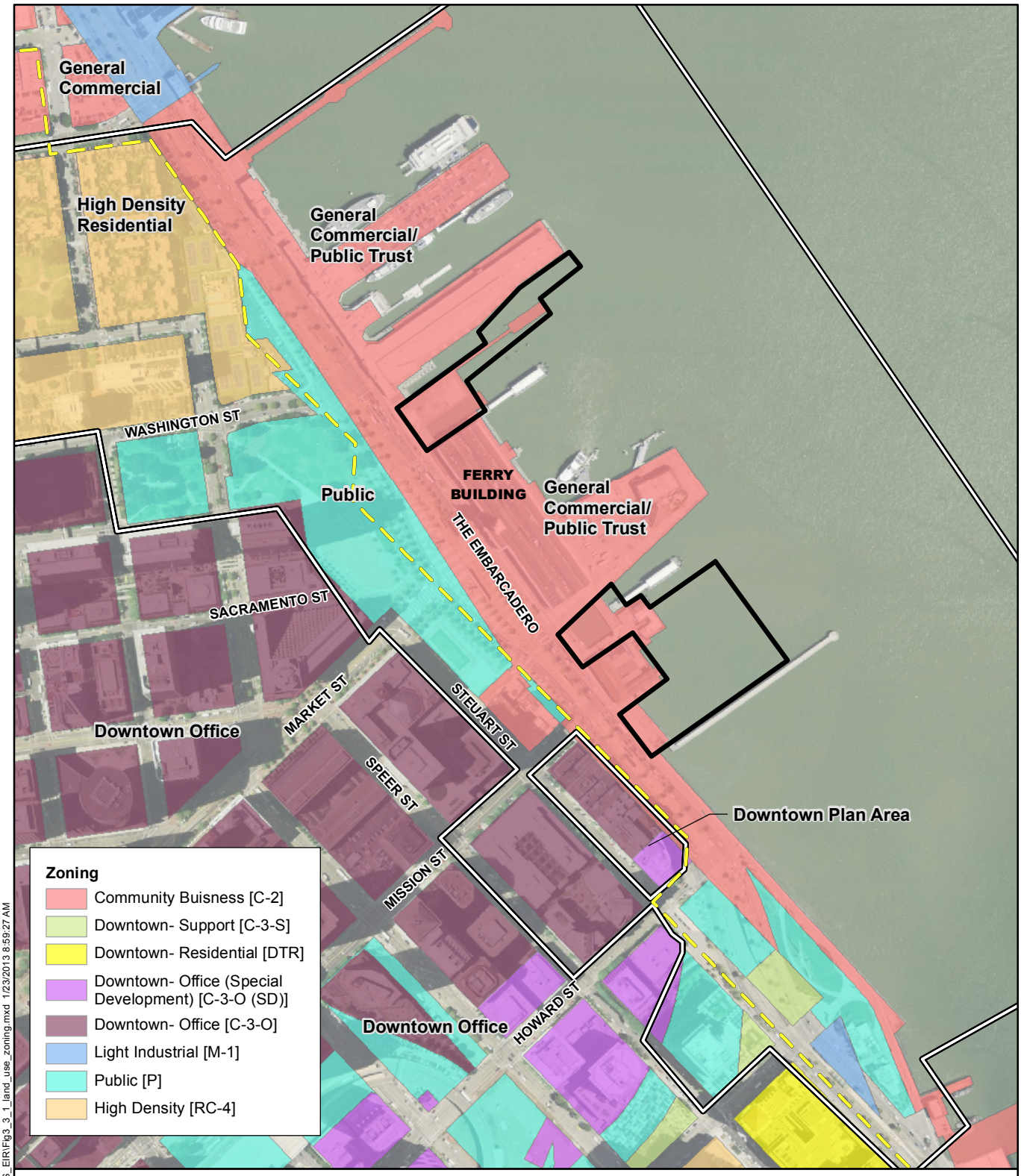
The project area is within a C-2 zoning district with an 84-foot height restriction and "j" bulk limitation.[1] Areas designated as C-2 are generally characterized by shopping areas with assorted goods and services.

Regulatory Setting

Federal

The proposed project seeks federal funds that would be administered by the Federal Transit Administration, and as such the project would be subject to the provisions of the National Environmental Policy Act.

[1] "J" corresponds to a maximum bulk limit of 40 feet (San Francisco Municipal Code).



Source: Imagery, Digital Globe, 2009; General Plan & Zoning, San Francisco Planning Dept.

GENERAL PLAN LAND USE AND ZONING

Downtown San Francisco
Ferry Terminal Expansion Project
San Francisco, California

28067812

FIGURE 3.3-1

Coastal Zone Management Act

The Coastal Zone Management Act (CZMA), established in 1972 and administered by the National Oceanic and Atmospheric Administration's Office of Ocean and Coastal Resource Management, provides for management of the nation's coastal resources. The overall purpose is to balance competing land and water issues in the coastal zone. Under the federal consistency provisions of the CZMA, federal projects need to be determined to be consistent with the state's coastal zone management program and policies (16 United States Code § 1456). For San Francisco Bay and the project area, the San Francisco BCDC (discussed below) is the state's coastal zone management agency responsible for issuing consistency determinations under the CZMA.

State

At the state level, the California Environmental Quality Act (CEQA) (California Public Resources Code Sections 21000-21178) and the CEQA Guidelines (14 California Code of Regulations 15000-15387) are the primary policies that require projects to analyze potential impacts to land use, as well as to analyze the project's consistency with land use planning policies applicable to the project.

Public Trust Doctrine (California State Lands Commission)

The California State Lands Commission (CSLC) manages lands in California according to the Public Trust Doctrine. Several of the guiding principles of the Public Trust are:

I. Lands under the ocean and under navigable streams are owned by the public and held in trust for the people by government. These are referred to as public trust lands, and include filled lands formerly under water. Public trust lands cannot be bought and sold like other state-owned lands. Only in rare cases may the public trust be terminated, and only where consistent with the purposes and needs of the trust.

II. Uses of trust lands, whether granted to a local agency or administered by the state directly, are generally limited to those that are water dependent or related, and include commerce, fisheries, and navigation, environmental preservation and recreation. Public trust uses include, among others, ports, marinas, docks and wharves, buoys, hunting, commercial and sport fishing, bathing, swimming, and boating. Public trust lands may also be kept in their natural state for habitat, wildlife refuges, scientific study, or open space. Ancillary or incidental uses, that is, uses that directly promote trust uses, are directly supportive and necessary for trust uses, or that accommodate the public's enjoyment of trust lands, are also permitted. Examples include facilities to serve visitors, such as hotels and restaurants, shops, parking lots, and restrooms. Other examples are commercial facilities that must be located on or directly adjacent to the water, such as warehouses, container cargo storage, and facilities for the development and production of oil and gas. Uses that are generally not permitted on public trust lands are those that are not trust use related, do not serve a public purpose, and can be located on non-waterfront property, such as residential and nonmaritime related commercial and office uses. While trust lands cannot generally be alienated from public ownership, uses of trust lands can be carried out by public or private entities by lease from this CSLC or a local agency grantee. In some cases, such as some industrial leases, the public may be excluded from public trust lands in order to accomplish a proper trust use.

III. Because public trust lands are held in trust for all citizens of California, they must be used to serve statewide, as opposed to purely local, public purposes.

In 1968, under the Burton Act, the State of California transferred jurisdictional responsibility of the San Francisco waterfront to the City of San Francisco (City). The City, as a condition of the transfer, created

the Port Commission, a department of the City, with the authority to manage the waterfront for the citizens of California and as public trust lands. As such, the CSLC is considered a trustee agency for this project. Trust lands are those under navigable waters, including filled lands formerly under water.

Regional

San Francisco Bay Plan

BCDC has permit authority over development of San Francisco Bay and the shoreline pursuant to the McAteer-Petris Act (California Government Code Section 66000 et seq.). The act requires BCDC to prepare a "comprehensive and enforceable plan for the conservation of the water of San Francisco Bay and the development of its shoreline." BCDC's jurisdiction includes all tidal areas of San Francisco Bay up to the line of mean high tide; all areas formerly subject to tidal action that have been filled since September 17, 1965; and the "shoreline band," which extends 100 feet inland from and parallel to the San Francisco Bay shoreline.

BCDC is also the local coastal zone management agency for San Francisco Bay. Therefore, under the provisions of Section 307 of the federal CZMA (discussed above), federal agencies must assess whether their actions are consistent with BCDC's regulations and policies.

BCDC has jurisdiction over all filling,[2] dredging, and changes in use in San Francisco Bay. Furthermore, BCDC regulates new development within 100 feet of the shoreline subject to tidal action, to ensure that maximum public access to San Francisco Bay is provided; and ensures that the limited amount of shoreline suitable for regional high-priority water-oriented uses is reserved for such purposes. A permit would be needed from BCDC for demolition of piers, construction of new gates, and new deck and pile construction.

The San Francisco Bay Plan (Bay Plan), adopted in 1969, is BCDC's policy document specifying goals, objectives, and policies for BCDC jurisdictional areas (BCDC, 2008). Major conclusions and policies that are applicable to the proposed project are:

> **Uses of the Shoreline.** All desirable, high priority uses of the Bay and shoreline can be fully accommodated without substantial Bay filling, and without loss of large natural resource areas. But shoreline areas suitable for priority uses—ports, water-related industry, airports, wildlife refuges, and water-related recreation—exist only in limited amount, and should be reserved for these purposes.
>
> **Fills in Accord with Bay Plan.** A proposed project should be approved if the filling is the minimum necessary to achieve its purpose, and if it meets one of the following three conditions:
>
> a. The filling is in accord with the Bay Plan policies as to the Bay-related purposes for which filling may be needed (i.e., ports, water-related industry, and water-related recreation) and is shown on the Bay Plan maps as likely to be needed; or
>
> b. The filling is in accord with Bay Plan policies as to purposes for which some fill may be needed if there is no other alternative (i.e., airports, roads, and utility routes); or
>
> c. The filling is in accord with the Bay Plan policies as to minor fills for improving shoreline appearance or public access.

[2] Fill is generally defined as any material in or over the water surface, including pilings, structures placed on pilings, and floating structures in the San Francisco Bay.

Filling for Public Trust Uses on Publicly-Owned Property Granted in Trust to a Public Agency by the Legislature Policies Concerning Filling for Public Trust Uses on Publicly-Owned Property Granted in Trust to a Public Agency by the Legislature

1. Filling should be approved if the filling is undertaken on land granted in trust by the Legislature to a public agency and the Commission finds that the filling and use proposed on the fill are consistent with the Public Trust Doctrine, the terms of the legislative trust grant, and with a Special Area Plan for the area that the Commission has found:

    a. Is necessary to the health, safety, and welfare of the public in the entire Bay Area; and

    b. Provides for major shoreline parks, regional public access facilities, removal of existing pile-supported fill, open water basins, increased safety of fills, mechanisms for implementation, enhanced public views of the Bay, and other benefits to the Bay, all of which exceed the benefits that could be accomplished through BCDC's permit authority for individual projects through the application of other Bay Plan policies.

Additional Bay Plan policies applicable to the proposed project include:

Transportation Policy 5. Ferry terminals should be sited at locations that are near navigable channels, would not rapidly fill with sediment, and would not significantly impact tidal marshes, tidal flats, or other valuable wildlife habitat. Wherever possible, terminals should be located near higher density, mixed-use development served by public transit. Terminal parking facilities should be set back from the shoreline to allow for public access and enjoyment of San Francisco Bay.

Public Trust. Policy 1. When the Commission takes any action affecting lands subject to the public trust, it should ensure that the action is consistent with the public trust needs for the area and, in case of lands subject to legislative grants, should also ensure that the terms of the grant are satisfied and the project is in furtherance of statewide purposes.

BCDC relies on the CSLC determination that the project use is consistent with public trust. As discussed above, the Port is the responsible party related to public trust in the project area.

Public Access. Bay Plan findings and policies related to public access (Public Access to the Bay Findings a through d, Public Access Policies 8 and 9, and Section 66602 of the McAteer-Petris Act) are discussed in Section 3.4, Parklands and Recreation.

Fish, Other Aquatic Organisms, and Wildlife. Bay Plan policies related to fish, other aquatic organisms, and wildlife are discussed in Section 3.9, Biological Resources.

Water Surface Area and Volume. Bay Plan policies related to surface area of San Francisco Bay and the total volume of water are discussed in Section 3.11, Hydrology and Water Quality.

Water Quality. Bay Plan policies related to water quality and water pollution prevention are discussed in Section 3.11, Hydrology and Water Quality.

Safety of Fills and Seal Level Rise. Bay Plan policies related to flood protection and seal level rise are discussed in Section 3.11, Hydrology and Water Quality.

San Francisco Waterfront Special Area Plan

The SAP is an amendment to the Bay Plan and focuses exclusively on the San Francisco Waterfront from India Basin to the Aquatic Park. The SAP was developed in coordination with CCSF and the Port, and initially adopted by BCDC in 1975. It applies the requirements of the McAteer-Petris Act and the

provisions of the Bay Plan to the San Francisco waterfront in greater detail than the Bay Plan (BCDC, 2000).

The SAP includes general policies that are applicable to the entire San Francisco waterfront area. The general policies identify three separate geographic vicinities, each of which have more specific policies enabling the reuse of specific piers, and facilitating the implementation of public benefits. The project site is within the Ferry Building Subarea of the Northeastern Waterfront. Policies for the Northeastern Waterfront geographic vicinity enable the reuse of certain piers along the Northeastern Waterfront, and facilitate the implementation of a public benefits package. The SAP includes policies related to pier uses, open water basins and area, plaza areas, and public access. The purpose of the SAP is to reunite the City with the Northeastern Waterfront by establishing policies to realize the waterfront's potential as a focal point for recreation; increase public use and enjoyment of San Francisco Bay and the waterfront; and support maritime cargo shipping, fisheries, ferries, excursion boats, and other maritime navigation uses of the waterfront, consistent with BCDC's San Francisco Bay Area Seaport Plan (see below for discussion of Seaport Plan). The SAP was amended in 2012 to incorporate findings and policies as they relate to the America's Cup Project (BCDC, 2012). This section discusses the elements relevant to land use and planning; please see Section 3.4, Parklands and Recreation, for discussion of recreational and public access policies.

The SAP policies related to land use and planning that are applicable to the proposed project are as follows:

Open Water Areas

Permitted Uses:

- Water-Related Recreation
- Water Transportation (e.g., ferries, water taxis, and excursion boats)
- Bay-Oriented Commercial Recreation and Bay-Oriented Public Assembly
- Public Access

Policy 1

Open Water Areas are those areas of San Francisco Bay not designated as Open Water Basins. Create new Open Water Areas as follows:

b. By March 2013, remove a portion of Pier ½ as part of the 34th America's Cup Event Project, retaining only that portion required for retaining a vessel berthing facility and public access.

c. By March 2015, remove the existing shed at Pier 2 after the 34th America's Cup Event project, to improve Bay views and public access. Remove the northern portion of Pier 2 as part of the Downtown Ferry Terminal Phase 2 development project, whichever comes first; or (2) any reconfiguration of the existing restaurant on Pier 2.

Policy 2

Within Open Water Areas, new fill should be limited only to the following:

a. Minor pile-supported or floating fill for water transportation uses, such as ship and boat berthing facilities, mooring dolphins, buoys, floats and similar support uses.

b. Minor, pile-supported fill for Bay-oriented commercial recreation and Bay-oriented public assembly uses. The amount of new pile-supported fill for such uses will be offset by removal of

an equivalent amount of pile-supported fill elsewhere on the Northeastern Waterfront not otherwise designated as a pier for removal.

c. Areas appropriate for additional ferry terminals.

e. Minor fill for improving shoreline appearance or public access to the Bay, consistent with the Commission's regulations.

f. Seismic and safety repairs to an existing pier that is not being wholly reconstructed.

SAP Public Access Policies 1, 2, and 3; Policy 10, Public Access Siting and Design; Policy 13, Public Access Design; and General Policy 6, Required Public Access, are applicable to the project and are discussed in Section 3.4, Parklands and Recreation.

The SAP integrated package of public benefits includes the completion of a waterfront-wide, integrated public access network, guided by a policy framework for expanding public access; design policies that promote low-scale development and preserve significant San Francisco Bay views; an implementation program to fund and construct the plazas and pier removals; and enhancement of San Francisco Bay views and opportunities to enjoy water areas adjacent to The Embarcadero.

San Francisco Bay Trail Plan

See the Regulatory Settings in Section 3.4, Parklands and Recreation, for the relevant recreation and public access policies related to the proposed project and San Francisco Bay.

The San Francisco Bay Area Seaport Plan

The San Francisco Bay Area Seaport Plan (Seaport Plan) is a joint regional policy document of BCDC and the Metropolitan Transportation Commission. The Seaport Plan constitutes the maritime element of Metropolitan Transportation Commission's Regional Transportation Plan, and is incorporated into BCDC's Bay Plan, where it is the basis of the Bay Plan port policies. The overarching purpose of the plan is to enhance economic activity while protecting the environment, making efficient use of all resources, and coordinating development. The plan designates several ports in San Francisco Bay as port priority use areas, reserved for regional maritime port use. The priority use area for the Port is located south of China Basin, and is not in the proposed project area.

Local

San Francisco General Plan

Northeast Waterfront Area Plan. The overall goal of the Northeast Waterfront Area Plan is to create a physical and economic environment in the Northeastern Waterfront area to best serve the needs of the San Francisco community. To accomplish this goal, the dominant planning principles of the Plan are: (1) provide for those uses that positively contribute to the environmental quality of the area and contribute to the economic health of the Port and the City, (2) preserve and enhance the unique character of the area, and take advantage of the unique economic opportunity provided by San Francisco Bay, and (3) provide the maximum possible visual and physical access to San Francisco Bay while minimizing the adverse environmental impacts of existing and new activity.

Relevant land use and planning policies of the Northeast Waterfront Area Plan include:

Policy 1.1. Accommodate, where appropriate, additional activities that will strengthen the predominant economic functions of each subarea of the Northeastern Waterfront.

Policy 1.2. Consistent with other policies of this [Plan], encourage uses on Port property that return revenue to the Port to support and improve its facilities.

Policy 9.4. To the extent feasible, facilitate and expand the operation of passenger ferry systems to minimize traffic impacts.

Policy 10.7. Enhance and maintain the physical prominence of the Ferry Building.

Policy 26.7. Promote new maritime attractions and waterside access, such as water taxi and excursion boat stops, historic ships, and temporary mooring areas as part of new development.

Policy 26.17. Establish a Downtown Ferry Terminal at the Ferry Building as a primary destination point for all ferry and excursion boat riders on San Francisco Bay. The Downtown Ferry Terminal should provide a range of public landing facilities accessible to the disabled community to accommodate all vessel types requiring access to San Francisco. Any landing facilities should allow multiple operators access to the facilities.

Policy 26.18. Improve pedestrian access through the Ferry Building to the Downtown Ferry Terminal, including the Golden Gate Ferry Terminal. Create a continuous walkway along the eastern side of the Ferry Building that is separate from service vehicle access, to improve public access and to provide expanded space for ferry, excursion boat, water taxi, and other waterborne transit riders.

Northeast Waterfront Area Plan policy related to public access (Policies 5.5, 7.8, 7.9, 10.19, and 10.20) are discussed in Section 3.4, Parklands and Recreation.

San Francisco Planning Code

The San Francisco Planning Code (Planning Code), which incorporates by reference the City's Zoning Maps, implements the General Plan and governs permitted uses, densities, and configuration of buildings within the City. Permits to construct new buildings (or to alter or demolish existing ones) may not be issued unless (1) the proposed project conforms to the Planning Code, (2) allowable exceptions are granted pursuant to provisions of the Planning Code, or (3) amendments to the Planning Code are included as part of the project.

As mentioned previously, the project area is in a C-2 district. These districts provide convenience goods and services to residential areas of San Francisco, both in outlying sections and in closer-in, more densely built communities. In addition, some C-2 districts provide comparison shopping goods and services on a general or specialized basis to a citywide or regional market area, complementing the main area for such types of trade in downtown San Francisco. The extent of these districts varies from smaller clusters of stores to larger concentrated areas, including both shopping centers and strip developments along major thoroughfares, and in each case the character and intensity of commercial development are intended to be consistent with the character of other uses in the adjacent areas. The emphasis is on compatible retail uses, but a wider variety of goods and services is included to suit the longer-term needs of customers, and greater latitude is given for the provision of automobile-oriented uses.

The Port of San Francisco Waterfront Land Use Plan

One of the highest priorities of the Port of San Francisco Waterfront Land Use Plan (Waterfront Plan) is to restore the Ferry Building to its historic role as a transportation hub and centerpiece of the waterfront (Port, 2004). The goals of the Waterfront Plan also include establishing a framework to determine acceptable uses for properties of the Port. It includes the expansion of water transit operations at the Ferry Building, and encourages and fosters a balance of uses and activities on the waterfront, including

open space, recreation, and maritime and commercial activities. Policies of the Waterfront Plan related to public access and recreation are discussed in Section 3.4, Parklands and Recreation.

The Waterfront Plan describes uses that are consistent with the Public Trust. Long-term uses deemed consistent with the Public Trust include all maritime and maritime support, other water-related industry, open space, public recreation and assembly, aquaria, museums, water-related commercial recreation, and specialty retail and commercial designed to draw people to the water.

The Port of San Francisco Waterfront Land Use Plan Design and Access Element

The Waterfront Design and Access Element addresses the nature of public access and open spaces along the waterfront. It includes special emphasis on public access and open spaces, and provides design criteria for the Port Walk, which creates continuous waterfront pedestrian access from the Embarcadero Promenade south of the Agriculture Building to the southern edge of Pier 1.

The project site is in the Ferry Building Subarea of the Design and Access Element of the Waterfront Land Use Plan. The overarching goal of the plan is to reunite the City with a continuously accessible waterfront. The plan contains policies for the historic preservation of the Ferry Building and its adaptive reuse; support of the Ferry Building's prominence as a civic focal point on the waterfront; and preservation of views of the historic buildings on streets connecting the city to the waterfront. Policies support the connection of open spaces at the Ferry Building with nearby Justin Herman Plaza and Rincon Park; the design of Ferry Building open spaces to reflect the civic character already established by the Ferry Building, Agriculture Building, and bulkhead buildings; and the provision of connections to open water areas.

3.3.3 Impact Evaluation

The analysis considered whether the project would:

- Physically divide an existing community;
- Substantially affect existing land uses and land use patterns in the project vicinity; or
- Conflict with any applicable land use plan, policy, or regulation that an agency with jurisdiction over the project has adopted to avoid or mitigate environmental effects (including the local coastal program implementing the federal CZMA administered by BCDC).

The land use analysis for the proposed project evaluates land uses at buildout of the proposed project, and compares them with existing land uses at the project site and with the land use plans and policies pertaining to the project area.

The nearest residential communities to the project area are across The Embarcadero, west of the Ferry Building. The activities within the project area would not prevent access through neighborhoods, create a barrier to the residential area, or create an obstacle to circulation. Therefore, the project would not physically divide an existing community.

The project's contributions to the continuity of the existing land uses and land use patterns were also considered in this analysis (refer to Impact 3.3-1).

Issues related to displacement of people or businesses are addressed in Section 3.16, Socioeconomics.

The analysis evaluates the proposed project's consistency with land use plans and policies that apply to the project area. The evaluation of consistency with plans is organized by the responsible agencies (refer to Impacts 3.3-2, 3.3-3, and 3.3-4).

The CZMA is the only applicable federal regulation pertaining to land use; it is implemented locally through the plans and policies of BCDC, as described in Section 3.3.2, under Regulatory Setting. Therefore, CZMA consistency is discussed under Impact 3.3-2.

There are two applicable state regulations pertaining to land uses: CEQA and the Public Trust Doctrine. This Environmental Impact Statement (EIS)/Environmental Impact Report (EIR) is being completed to analyze and disclose to the public the potential impacts of the proposed project, consistent with the requirements of CEQA. Both the Port and BCDC have plans and policies that address consistency with the Public Trust Doctrine; the evaluation of the Public Trust Doctrine is provided in the sections of this chapter that discuss those agencies. The Port is the responsible agency for the Public Trust Doctrine under the Burton Act, and therefore consistency with the Public Trust Doctrine is discussed under Port policies in Impact 3.3-4. In addition, Public Trust is also a consideration under BCDC's plans and policies and is described briefly under the BCDC evaluation in Impact 3.3-2.

At the local level, CCSF and the Port are agencies with applicable land use plans and policies. Consistency with the San Francisco General Plan, including the Northeast Waterfront Area Plan, and the San Francisco Planning Code are evaluated under Impact 3.3-3. Consistency with the Port's Waterfront Land Use Plan and Waterfront Land Use Plan Design and Access Element are evaluated under Impact 3.3-4.

Direct Impacts

Impact 3.3-1: Substantially Affect Existing Land Uses and Land Use Patterns

No Action Alternative

Under the No Action Alternative, no changes to the existing terminal facilities would occur. The project area would continue to include a mixture of commercial, recreational, open space, public transportation, and maritime uses. Water Emergency Transportation Authority (WETA) water transit ridership would increase from 5,100 to approximately 7,800 passengers per weekday by 2035, and total AM peak-period WETA vessel arrivals would increase from 14 to approximately 20. Without facility improvements to accommodate the increase in passengers, the No Action Alternative could result in congestion around the Ferry Building from longer queues, and would temporarily decrease public access around the Ferry Terminal during peak water transit passenger boarding times. This could have periodic adverse impacts to existing land use patterns in the project area.

Action Alternative

The proposed project would expand the existing water transit facilities, pedestrian circulation, and passive recreation uses at the Ferry Terminal. All project improvements would occur with areas directly controlled by the Port, and would not affect, encroach on, or modify any property or access to property under the control of other entities, including transportation easements or rights-of-way held by other entities (e.g., Equity Office Partners or BART). The improvements along the northern edge of the Ferry Building would be located within an existing maintenance easement for the Ferry Building held by Equity Office Partners (the leaseholder for the Ferry Building); responsibility for maintenance of the new facilities would be set forth in a Site Maintenance Plan developed by the Port and WETA in coordination with Equity Office Partners; refer to Section 2.3.6, Site Maintenance. The proposed uses of the project area would continue to include a mixture of commercial, recreational, open space, public transportation, and maritime uses, consistent with the existing uses in the project area and in the immediate vicinity.

Therefore, the proposed project improvements and increase in water transit services at the Ferry Terminal support the existing land uses at the Ferry Terminal, and would allow for the continuation of existing land use patterns in the project vicinity.

NEPA Determination. The project would not result in adverse impacts to existing land uses or land use patterns.

CEQA Determination. The proposed project would not substantially affect existing land uses and land use patterns in the project vicinity; therefore, it would result in less-than-significant impacts.

Impact 3.3-2: Conflict with Applicable BCDC Plans and Policies

No Action Alternative

Under the No Action Alternative, no modifications would be made to the existing Ferry Terminal facilities. No new fill would be placed in San Francisco Bay, and no BCDC permits would be required. The No Action Alternative would not result in physical changes to the Ferry Terminal infrastructure, and therefore would not conflict directly with the policies of the Bay Plan or the SAP. Overall, the No Action Alternative would not have adverse impacts related to conflicts with applicable plans and policies of the BCDC.

Action Alternative

The project would be within BCDC's jurisdiction and would be subject to the McAteer-Petris Act and the Bay Plan. The proposed project would generally not conflict with applicable BCDC land use plans and policies adopted to avoid or mitigate environmental effects, because the project would generally comply with the McAteer-Petris Act and the policies of the Bay Plan, the SAP, and the Seaport Plan, as described below. BCDC policies pertaining to other resources are described in other sections of this EIS/EIR, as follows: Public Access is described in Section 3.4, Parklands and Recreation; Fish, Other Aquatic Organisms, and Wildlife are described in Section 3.9, Biological Resources; Water Surface Area and Volume, Water Quality, and Safety of Fills and Sea Level Rise are described in Section 3.11, Hydrology and Water Quality. As described in these sections, implementation of the proposed project would not be anticipated to result in conflicts with BCDC plans or policies.

BCDC would review the project for consistency with the applicable plans and policies prior to issuing permits and approvals. Because BCDC is also the local coastal zone management agency, BCDC's issuance of permits and approvals would also serve as the Federal Transit Administration's federal consistency determination pursuant to Section 307 of the CZMA. BCDC's involvement in the design of the proposed project is described in Section 2.6, Agency Approvals Required; and Chapter 6.0, Public Agency Involvement. As a result of BCDC's review and permitting for the proposed project, the project would be implemented in a manner consistent with BCDC plans and policies.

BCDC exercises two types of jurisdiction over the project area. The first is jurisdiction over a shoreline band, which extends 100 feet inland from and parallel to the San Francisco Bay shoreline. Port property landward of the seawall or on the seawall itself, such as The Embarcadero roadway and much of the Herb Caen Way/Embarcadero Promenade, lies within the BCDC shoreline band jurisdiction. Second, BCDC has jurisdiction over San Francisco Bay. The proposed project activities on the piers fall under BCDC Bay jurisdiction. Project demolition and construction would require a BCDC permit. As a condition of approval, BCDC requires maximum feasible public access for any project subject to its review.

The Ferry Terminal is designated as an Open Water Area in the SAP, and the project area is within Special Area Plan Map 3. Open Water Areas are defined as those areas along the San Francisco Bay waterfront not otherwise designated as Open Water Basins. BCDC policies support the continuation and further development of water transit services at the Ferry Terminal. Such uses are considered a permitted use in Open Water Areas; minor pile-supported or floating fill for water transportation uses, such as boat berthing facilities, is allowed.

Bay Fill. As detailed in Table 2-2, under the proposed project approximately 40,000 square feet of net new fill would be constructed in and over San Francisco Bay in the project area. As described in Chapter 2.0 and Table 2-2, the proposed project includes: (1) removal of existing fill; (2) repair of

existing structures that do not change the amount of fill; (3) replacement fill (i.e., demolition of structures and rebuilding new structures); and (4) the addition of new fill.

BCDC regulates the placement of new fill in San Francisco Bay. As described below, the proposed project would result in changes in San Francisco Bay fill that are consistent with the Bay Plan uses of the shoreline; fills in accordance with the Bay Plan; and filling for public trust uses on publicly-owned property.

Section 66605 of the McAteer-Petris Act states that further filling of San Francisco Bay should only be authorized if it is the minimum necessary to achieve the purpose of the project, and if the harmful effects associated with its placement are minimized. Fill is limited to water-oriented uses or minor fill for improving shoreline appearance of public access, and should only be authorized when no alternative upland location is available for those purposes. In addition, under the SAP, piers that are not designated for removal may be repaired or wholly reconstructed for uses that are consistent with the Public Trust Doctrine and the Port's Legislative Trust Grant. Consistent with the Public Trust Doctrine, new fill may be allowed for uses that (1) are necessary for public health, safety or welfare of the entire Bay Area; and (2) provide for major shoreline parks, regional public access facilities, removal of existing pile-supported fill, open water basins, increased safety of fills, mechanisms for implementation, enhanced public views of San Francisco Bay, and other benefits to San Francisco Bay.

The facility improvements proposed are the minimum required to meet the project's purpose, as described in Chapter 1.0, Purpose and Need. The project's purpose is to improve the facilities at the Ferry Terminal to support both daily water transit service, as outlined in WETA's Implementation and Operations Plan, and to improve facilities to support emergency operations. The project improvements include new gates, as well as the replacement of existing and construction of new pile-supported deck structures built to Essential Facility standards (i.e., designed to withstand earthquakes). Such improvements would increase public safety and welfare in the San Francisco region during a catastrophe, and improve day-to-day public water transit. Design of the project, including areas of additional fill for vessel docking, passenger queuing, and emergency coordination, is based on the anticipated water transit ridership (see Table 1-2), as well as emergency staging and evacuation needs (see Section 1.5.4). As such, the proposed project is considered to be the minimum necessary fill to achieve the purposes of the project. The potential harmful effects of the placement of the new fill would be minimized as described in other sections of this EIS/EIR. The project improvements would also improve public access in the project area, as described in further detail in Section 3.4, Parklands and Recreation.

The removal of the northern portion of Pier 2 would be consistent with SAP Policy 1. Consistent with SAP Policy 2 for Open Water Areas, the new fill in the Open Water Areas would be limited to areas appropriate for additional ferry terminals and would support San Francisco Bay-oriented public assembly uses such as the Embarcadero Plaza; improve shoreline appearance and public access; and support seismic and safety repairs. Overall, the net new fill would not conflict with the policies of the Bay Plan and the SAP.

Pursuant to BCDC policies, fill consistent with Bay Plan and SAP policies would be required to be offset with the removal of fill elsewhere in their jurisdiction. Implementation of Mitigation Measure LU-1 requires that WETA mitigate new fill in San Francisco Bay with the removal of fill. The specific location and the amount of fill that would be removed would be determined as a part of the BCDC Major Permit and Design Review process.

Transportation. Policy 5 of the Bay Plan states that ferry terminals should be sited at locations that are near navigable channels; would not rapidly fill with sediment; and would not significantly impact tidal marshes, tidal flats or other valuable wildlife habitat. Wherever possible, terminals should be near higher density, mixed-use development served by public transit. Terminal parking facilities should be set back from the shoreline to allow for public access and enjoyment of San Francisco Bay.

Consistent with Policy 5, the proposed project would be along a navigable channel, near a high-density mixed-use area served by public transit in a location that is currently used for water transit. The Ferry Terminal is the main water transit hub for the City, and is served by a number of local and regional transit lines. The San Francisco Municipal Transit Agency's Municipal Railway provides bus and light rail service in close proximity to the Ferry Terminal, including connections to Caltrain. Additionally, the BART's Embarcadero Station is approximately 0.2 mile from the Ferry Terminal, providing connections to San Francisco, the East Bay, and San Mateo County. Additional transit connections are available at the Transbay Terminal (approximately 0.5 mile from the Ferry Terminal) to the Alameda-Contra Costa Transit District, the San Mateo County Transit District, and Golden Gate Transit.

Additionally, consistent with Policy 5 and as described in Section 3.9, Biological Resources, the Ferry Terminal site does not contain tidal marshes, flats, or other valuable wildlife habitat, and would not result in impacts to such biological resources. The proposed project does not include the development of any additional parking facilities, because it would primarily be the destination for passengers coming into San Francisco from the East Bay. The proposed water transit gates would be in proximity to navigable channels, and only minor maintenance dredging would be required beneath the new floats, every 3 or 4 years, as described in Section 2.3.6.

Public Trust. The purpose of the Public Trust Doctrine is to ensure that the lands to which it pertains are kept for trust uses, defined as uses that benefit the public as a whole, such as commerce, navigation, fisheries, wildlife habitat, recreation, and open space. Per Bay Plan Public Trust Policy 1, the Commission is tasked with ensuring that the action it takes regarding public trust lands is consistent with the public trust needs for the area. In the case of lands subject to legislative grants, the Commission should also ensure that the terms of the grant are satisfied and the project is in furtherance of statewide purposes.

Title to Port property, including the project site, is held by CCSF, and administered through its Port Commission. Under the Burton Act, the Port has the power to use, manage, operate, and regulate port lands consistent with public trust restrictions established by common law, the Burton Act, the City Charter, the transfer agreement, and local and regional plans. Consistency with Public Trust is further evaluated under Impact 3.3-5, below. BCDC will rely on the Port's determination when making its own determination of project's consistency with its laws and policies. The Port will issue its findings when issuing the lease agreement for the project based on review of this EIS/EIR, and contingent upon design review and building permit requirements.

Seaport Plan. Policies of the Seaport Plan seek to enhance the economic activity at the ports while protecting the environment and making efficient use of all resources. The project site is not in a port priority use area, but it does support plan policies for the preservation of maritime uses because it expands the existing ferry facilities. Consistent with the plan policies, the expansion of the Ferry Terminal would continue to assist in alleviating traffic congestion, and would not interfere with ongoing or future planned port uses. The proposed project supports passenger safety, which is a goal of the project, by providing expanded and improved passenger facilities; and it supports navigational safety in San Francisco Bay by creating adequate docking facilities for the anticipated future vessel traffic, including for emergency response.

NEPA Determination. The proposed project would be consistent with applicable BCDC plans and policies, and therefore consistent with the CZMA, with the implementation of Mitigation Measure LU-1. With implementation of Mitigation Measure LU-1, impacts would not be adverse.

CEQA Determination. With the implementation of Mitigation Measure LU-1, the proposed project would be consistent with applicable BCDC plans and policies that were adopted to avoid or mitigate environmental effects. Therefore, impacts would be less than significant with mitigation incorporated.

Impact 3.3-3: Conflict with Applicable City and County of San Francisco Land Use Plans and Policies

No Action Alternative

Under the No Action Alternative, no modifications would be made to the existing Ferry Terminal facilities. No new structures would be constructed, and no CCSF permits or approvals would be required. The No Action Alternative would not result in physical changes to the Ferry Terminal infrastructure; therefore, it would not conflict with the policies of the San Francisco General Plan, including the Northeast Waterfront Area Plan and the San Francisco Planning Code. Therefore, the No Action Alternative would not have adverse impacts related to conflicts with applicable plans and policies of CCSF.

Action Alternative

The project area is designated as General Commercial/Public Trust, in the Ferry Building Subarea Generalized Land Use Map of the Northeast Waterfront Area Plan. The proposed project would be generally consistent with the permitted commercial and public trust uses of this district. The proposed project would respond to the objectives and policies of the area plan by contributing to the economic health of the Port and the City. Expansion of Ferry Terminal facilities would contribute to the unique character of the area by adding gates and other features consistent with a ferry terminal; improve Port facilities with additional plaza area and walkways; and capitalize on the unique economic opportunities of San Francisco Bay, such as providing linkages with other ports in the Bay. The proposed project would enhance and maintain the prominence of the Ferry Building by expanding the facilities for passenger water transit services. Consistent with the Ferry Building Subarea policies, the proposed project would promote expanded waterside access and water transit services, and further the Ferry Terminal as a primary destination for water transit services. A continuous walkway along the eastern side of the Ferry Building would provide improved public access along the waterfront.

The project area is designated by the San Francisco Planning Code as a Community Business (C-2) District with an 84-foot height restriction and "j" bulk limitation.[3] C-2 districts provide convenience goods and services to residential areas, as well as comparison shopping goods and services on a general or specialized basis to citywide or regional market areas. The proposed uses are a continuation of the existing uses at the site, and would be consistent with the uses permitted by right in the C-2 District. Permits for the construction of proposed structures would be required for the proposed project, in compliance with the Planning Code.

NEPA Determination. Through compliance with the required building permit process, the project would not result in adverse impacts related to conflicts with applicable plans and policies of the CCSF.

CEQA Determination. The project would not conflict with applicable CCSF plans and policies that were adopted to avoid or mitigate environmental effects, and therefore would have no impact.

Impact 3.3-4: Conflict with Applicable Port of San Francisco Land Use Plans and Policies

No Action Alternative

Under the No Action Alternative, no modifications would be made to the existing Ferry Terminal facilities. No new structures would be constructed and no Port permits or approvals would be required. The No Action Alternative would not result in physical changes to the Ferry Terminal infrastructure; therefore, it would not conflict with the policies of the Waterfront Land Use Plan, including the Design

[3] "J" corresponds to a maximum bulk limit of 40 feet (San Francisco Municipal Code).

and Access Element of the plan. Therefore, the No Action Alternative would not have adverse impacts related to conflicts with applicable plans and policies of the Port.

Action Alternative

The Port is the trustee of the Public Trust for lands within its jurisdiction, and may enter into leases or franchises not to exceed 66 years for trust-consistent purposes. The Waterfront Land Use Plan outlines evaluation criteria to determine whether a use is consistent with the Public Trust, including a determination of whether the project would "promote navigation, fisheries, waterfront commerce, enhance natural resources or attract people to use and enjoy the bay." Maritime uses, as defined in the plan, include ferry terminals. The maritime, open space, and public recreation uses proposed under the project would be consistent with the long-term Public Trust uses described in the Waterfront Land Use Plan.

The project site is in the Ferry Building Waterfront Subarea of the Waterfront Land Use Plan, and is designated as a Waterfront Mixed Use Opportunity Area. The plan allows for existing and acceptable maritime uses, commercial areas, public access, and open space areas in a Waterfront Mixed Use Opportunity Area. Consistent with BCDC's SAP, areas of the project sites are designated for public access and open space; new water transit gates are proposed; and portions of piers are designated to be removed. The proposed project is consistent with these use designations.

The Waterfront Design and Access Element of the Waterfront Land Use Plan addresses the nature of public access and open spaces along the waterfront. It places special emphasis on public access and open spaces, and provides design criteria for the Port Walk, which creates continuous waterfront pedestrian access from the Embarcadero Promenade south of the Agriculture Building to the southern edge of Pier 1. The project site is in the Ferry Building Subarea of the Design and Access Element, and would be consistent with applicable design criteria for massing of structures, preservation of open water, and orientation of public access and toward the water; refer to Section 3.10, Aesthetics and Visual Resources, for more information on these policies. The project would be consistent with the plan's goal to create a continuously accessible waterfront by improving the South Apron of the Agriculture Building and Marginal Wharf and constructing the East Bayside Promenade and Embarcadero Plaza. The project would be consistent with policies that support the connection of open spaces that reflect the civic character of the area, and provide connections to open water areas.

The Waterfront Design and Access Element provides specific design criteria for areas near the Ferry and Agriculture buildings, which include the project site. These design criteria address the massing and orientation of structures, water coverage, enhancement of view of San Francisco Bay and boating activity, public access, and architectural design and details. The proposed design of the project facilities would be consistent with the existing facilities in the Ferry Terminal area, including the design of the existing gates at the Ferry Building (Gates B and E) that were constructed by the Port in 2003.

The final project design would be considered jointly by the Port and BCDC during design review and project permitting. The Port's review and permitting process would ensure that the project is implemented in a manner that is consistent with its plans and policies.

NEPA Determination. The project would not result in adverse impacts related to conflicts with applicable Port plans and policies that were adopted to avoid or mitigate environmental effects.

CEQA Determination. The project would have less-than-significant impacts related to conflicts with applicable Port plans and policies that were adopted to avoid or mitigate environmental effects.

Indirect Impacts

Neither the No Action Alternative nor the Action Alternative would have indirect impacts to land use.

Construction Impacts

The No Action Alternative would not result in any physical changes to the Ferry Terminal, and no construction activities would be required. Therefore, there would be no construction impacts to land use.

Impact 3.3-5: Substantially Affect Existing Land Uses During Construction

Under the Action Alternative, staging and construction of the proposed project would take place from barges over San Francisco Bay, and there would be limited landside activities at the Ferry Terminal. Construction activities would be limited to those areas shown on Figure 2-9, and would not affect, modify, or prevent access to the other land uses in the project area located on the Ferry Plaza, or in the Ferry Building or Agriculture Building. In addition, the existing fire lane along the southern side of the Ferry Building would remain unobstructed during construction. As described in Section 2.4.5, Construction Staging, access to the existing businesses and water transit gates would be maintained during construction, and appropriate wayfinding signage would be included as necessary. Landside activities would include delivery of materials that could result in traffic lane closures or vehicular and pedestrian delays, as described in Section 3.2, Transportation and Circulation. Other potential construction-related impacts are described in other sections of this EIS/EIR. Construction of the proposed project would be temporary and would not result in adverse impacts from the physical division of existing communities, substantial changes to land use or land use patterns, or conflicts with applicable land use plans or policies.

NEPA Determination. Construction-related impacts to land use would not be adverse.

CEQA Determination. There would be no construction-related impacts to land use.

Cumulative Impacts

Impact 3.3-6: Potential to Result in Cumulative Impacts on Land Use

The proposed project would expand water transit and passive recreation uses at the Ferry Terminal, and would require the construction of new facilities, such as the gates. The proposed project facilities and land uses would be generally consistent with the existing land uses and land use patterns in the project area, and would also be generally consistent with the Port's land use and design plans and policies. The Port's permitting and approval process would ensure the project's consistency with the Port's policies. Although the impacts from the proposed project would not be substantial and have been determined to be less than significant and not adverse, other reasonably foreseeable projects in the study area (along and adjacent to San Francisco's eastern waterfront) could result in similar impacts. Projects, such as the America's Cup project, San Francisco/Oakland Bay Bridge Seismic Safety projects, Pier 27 Cruise Ship Terminal project, the Piers 15 and 17 Exploratorium Relocation, 8 Washington Street, 350 Mission Street, Transbay Transit Center, Central Subway, and Pier 70 Area (listed in Table 3.1-1), would generally involve upgrades to existing infrastructure and public facilities, rehabilitation or replacement of aging facilities, or the development of mixed urban uses. These projects, in combination with the proposed project, would affect land use and lands use patterns in the study area and/or result in the construction of facilities along the waterfront. Although individual projects may result in land use impacts, those projects—in combination with the proposed project—would not be anticipated to contribute collectively to cumulative land use impacts, because individual impacts would be mitigated, and because the projects under the cumulative scenario would be generally consistent with the urban character and existing land uses in the study area. As part of the permitting and approvals process for individual projects, potential

land use impacts would be evaluated and project consistency with the CCSF and Port's applicable plans would be ensured by the lead agency. Therefore, the reasonably foreseeable projects, in combination with the proposed project, would not result in adverse cumulative land use impacts.

The proposed project is also within the jurisdiction of BCDC, and would be generally consistent with BCDC's plans and policies. The project would increase fill in San Francisco Bay, a potentially adverse impact. Projects, such as the America's Cup project, San Francisco/Oakland Bay Bridge Seismic Safety projects, Brannan Street Wharf, Pier 27 Cruise Ship Terminal project, the Piers 15 and 17 Exploratorium Relocation, and Pier 70 Area (listed in Table 3.1-1), could also result in additional fill in San Francisco Bay. BCDC regulates the placement of new fill in San Francisco Bay to ensure that changes in San Francisco Bay fill are consistent with the Bay Plan uses of the shoreline; that fills are in accordance with the Bay Plan; and that the fill is for public trust uses on publicly owned property. As part of the permitting and approvals process for individual projects, potential fill impacts would be evaluated and project consistency with the BCDC plans would be ensured by the lead agency and BCDC. Mitigation of proposed new fill would be required, as necessary. For example, WETA will implement Mitigation Measure LU-1, which requires the removal of fill elsewhere in San Francisco Bay. Therefore, the reasonably foreseeable projects, in combination with the proposed project, would not result in adverse cumulative impacts related to an increase in fill in San Francisco Bay.

NEPA Determination. The project would not contribute to cumulative adverse impacts to land uses in the study area.

CEQA Determination. Cumulative impacts to land uses in the study area would be less than significant.

3.3.4 Mitigation Measures

Mitigation Measure LU-1: Removal of Fill in San Francisco Bay

To offset the new fill in San Francisco Bay created by the proposed project improvements, WETA will remove fill elsewhere in San Francisco Bay. Fill removal location and amount will be determined in coordination with BCDC during the Major Permit and Design Review process. The amount of fill to be removed is anticipated to be no more than the amount of new fill created by the project. Sites that would be considered for fill removal include dilapidated piers, wharfs, and remnant pilings that were constructed with creosote-treated wood; have no current maritime uses; and are not in areas with sensitive biological resources, such as eelgrass beds.

WETA would conduct removal activities in accordance with applicable regulatory permits (as described in this EIS/EIR), and would cut or break the piles off at least 2 feet below the mudline. WETA would minimize sediment disturbance during removal, use a floating boom around the work area to contain and capture debris; and have absorbent pads available in the event that a petroleum sheen develops during removal of the structures. Mitigation measures and regulatory requirements described in the EIS/EIR for proposed project activities (i.e., demolition and removal of piles and piers) would also apply to the demolition and removal of fill elsewhere in the Bay; these would include Mitigation Measures AQ-1, Implement BAAQMD-Recommended Best Management Practices; CUL-1, Inadvertent Discovery Measures; CUL-2, Stop Construction if Buried Paleontological Resources are Discovered; HAZ-1, Prepare a Hazardous Materials Management Plan; and BIO-1, Dredging and Pile Driving Measures.

3.4 PARKLANDS AND RECREATION

3.4.1 Introduction to the Analysis

This section describes the existing parks and recreation environment, including recreation resources in the project area; discusses applicable regulations; and evaluates the potential impacts of implementation of the No Action Alternative and the Action Alternative. In addition to parks and open space areas, public access to San Francisco Bay, provided by both trails and viewing areas of San Francisco Bay, are key components of the parks and recreation analysis because they serve an important recreation function in the immediate project area. As described below, the proposed project's impacts on parklands and recreation would not be adverse, and would be less than significant.

3.4.2 Affected Environment

This section describes existing parklands and recreation facilities in the project area and the study area. It also provides a regulatory framework describing applicable policies and plans relevant to parklands and recreation in the study area. For the purpose of this analysis, the project's study area encompasses the project area and the surrounding area within approximately 1,000 feet of the project area.

Existing Setting

Study Area

The project area is in the San Francisco Ferry Building (Ferry Building) Subarea of the Northeastern Waterfront Planning Area of San Francisco. The Northeastern Waterfront Area Plan identifies the Ferry Building Subarea as the area from just north of Pier 3 to south of Pier 22½ (SF Planning, 2003). For the purpose of this analysis, the project's study area encompasses the project area and the surrounding area within approximately 1,000 feet of the project area. Figure 3.4-1 shows the major parklands and open spaces in the study area, including Pier 7, Justin Herman-Embarcadero Plaza (Justin Herman Plaza), Harry Bridges Plaza, Sue Bierman Park, Pier 14, and Rincon Park.

Within the study area, recreation facilities support a variety of functions, including both passive and active recreation uses, as described below.

Parklands and Open Space and Trails

The parks and piers in the study area—as well as the Herb Caen Way/Embarcadero Promenade (the Embarcadero Promenade), which connects the park areas—are described below. Uses in the vicinity of the parks are primarily office and commercial; however, there are residential uses near Sue Bierman and Rincon parks.

Harry Bridges Plaza, the paved area west of the Ferry Building and between The Embarcadero's northbound and southbound lanes, is popular for skateboarding and pedestrian access between the Ferry Building and The Embarcadero. Harry Bridges Plaza is under the jurisdiction of the Port of San Francisco (Port).

Justin Herman Plaza is a 4.3-acre open space at the foot of Market Street, across the street from the Ferry Building, and is characterized by large open paved and grassy areas and a large fountain/sculpture. Justin Herman Plaza, under the jurisdiction of the San Francisco Recreation and Park Department, is used for various activities and group events throughout the year. In the winter, an ice skating rink is created in the plaza. Tables, benches, and steps offer seating opportunities year round.

Sue Bierman Park is a 4.4-acre park, formerly known as Ferry Park, bounded by The Embarcadero and Washington, Davis, and Clay streets. Sue Bierman Park is under the jurisdiction of the San Francisco

Recreation and Park Department. There are residential uses, as well as office and commercial uses, adjacent to the park.

Rincon Park is a 2-acre waterfront grassy area on The Embarcadero at the terminus of Folsom Street between Harrison Street and Howard Street, under the jurisdiction of the Port. There are residential uses across The Embarcadero.

Two piers provide additional open space in the study area.

- Pier 7, an 840-foot-long public access and fishing pier south of Broadway Avenue, is under the jurisdiction of the Port. It was reconstructed following the Loma Prieta earthquake in 1989. The pier includes timber decking, ornamental iron handrails, antique-style iron and wooden benches, light fixtures, and benches.

- Pier 14, a 637-foot-long public pier, is under the jurisdiction of the Port. It was built in Phase I of the Downtown San Francisco Ferry Terminal (Ferry Terminal) project. The pier serves as a breakwater for the South Basin of the Ferry Terminal. There are rotating public art installations on the land side of Pier 14.

These open spaces are linked by the Embarcadero Promenade, the 25-foot-wide pedestrian promenade running 2.75 miles along the waterfront between The Embarcadero and the pier bulkhead buildings, from South Beach to Fisherman's Wharf, passing the Ferry Building. The Embarcadero Promenade is also under the jurisdiction of the Port. The Embarcadero Promenade and its contiguous open spaces provide more than 16 acres of public open space. The Promenade is a multi-use pathway designated for recreation, bicycle transportation, maritime functions, and access to piers. The San Francisco Bay Trail is collocated with the Embarcadero Promenade. The Bay Trail's purpose is to create connections between more than 130 parks and publicly accessible open space areas in a 400-mile recreational "ring around the Bay." Furthermore, the Bay Trail provides access to a wide array of commercial ferries and public boat launches. Additionally, the Embarcadero Promenade in the study area is part of the Shoreline Trail identified in the San Francisco General Plan. Bicycle Route 5, a Class II bicycle lane, is also located along The Embarcadero. See Section 3.2, Transportation and Circulation, for discussion of bicycle lanes.

Recreational Activity

Recreational boating in San Francisco Bay includes motoring, sailing, and kayaking. There are several sailing clubs and schools in the Bay Area. Crewed charters and scheduled sailboat cruises based in the South Beach Harbor may pass near the study area. Sailboats and charters pass near the study area mostly in the afternoon and on the weekends. There is a public launch ramp in San Francisco at Pier 54, approximately 1.6 miles south of the project area, and also a recreational boat guest dock at Pier 1½; both of these are used by motored and nonmotored vessels, including water taxis. There are three marinas in San Francisco: near AT&T Park, in Fisherman's Wharf, and near Crissy Field. The closest is at the South Beach Harbor, near AT&T Park, and is approximately 1 mile south of the project area.

There are many recreational kayak tours operating in the Bay Area. Kayak tours close to the project study area launch from Fisherman's Wharf or the South Beach Harbor (BoatingSF, 2011). Kayakers may paddle near the project area.

Public Access

There are many public access opportunities in the study area, including the Embarcadero Promenade, which passes through the project area; the Broadway and Rincon Point Open Water Basins; public access at Pier 3; and Justin Herman and Harry Bridges plazas. The Broadway Open Water Basin is between

Embarcadero Promenade & Bay Trail

Project Area

Park and Open Space

Note: The America's Cup project has removed all of Pier 1/2 and will remove the building located on Pier 2 prior to project construction.

N

0 250 500 FEET

Source: Aerial imagery, NAIP, 2009.

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PARKS AND OPEN SPACES

Downtown San Francisco
Ferry Terminal Expansion Project
28067812 San Francisco, California

FIGURE 3.4-1

Piers 3 and 9. The Rincon Open Water Basin is between the Ferry Terminal Breakwater (Pier 14) and the Pier 22½ Fire Boat House. Broadway and Rincon Point Open Water Basins are maintained as part of the Port public access and open space policies. They provide opportunities for views of San Francisco Bay and maritime activities. In addition, they integrate new public access and open space on piers with the continuous waterfront walkway. The landside Broadway and Rincon Point Open Water Basins are also maintained in accordance with the San Francisco Waterfront Special Area Plan (SAP) of the San Francisco Bay Conservation and Development Commission (BCDC). Waterside uses of the open water basins include water-related recreation, such as sailing and kayaking; and water transportation, such ferries and excursion boats.

Project Area

The project area encompasses the buildings and open spaces between Pier 1 to the north, Pier 14 to the south, The Embarcadero to the west, and San Francisco Bay to the east. The Ferry Building is prominently located at the center of the project area, and is a popular attraction for downtown workers, city residents, and visitors. The project area offers many opportunities for public access to San Francisco Bay (both physical and visual), including access to water transit services and views of San Francisco Bay, Treasure Island, the Bay Bridge, and the San Francisco skyline. Refer to Section 3.10, Aesthetics and Visual Resources, for more detail on views in the project area.

The Ferry Plaza (to the east of the Ferry Building) and areas along the Embarcadero Promenade (north and south of the Ferry Building) offer limited seating benches facing San Francisco Bay. On Tuesdays, Thursdays, and Saturdays, the Ferry Plaza Farmer's Market takes place in the project area. The Ferry Building has a marketplace at the ground level, offering a variety of retail establishments, such as cafés and restaurants. There are public restrooms at both ends of the building, and bicycle racks in front of and behind the Ferry Building.

As previously discussed, the Embarcadero Promenade, including the Bay Trail, also passes through the project area.

Due to the existing water transit vessel traffic in the project area, recreational users on San Francisco Bay tend to pass through or near the project area rather than to use the project area as a destination for water-based recreation.

Regulatory Setting

Federal

Department of Transportation Act of 1966 Section 4(f)

Section 4(f) applies to projects that receive federal funding or federal approval by an agency of the Department of Transportation (in this case, the Federal Transit Administration). This act requires that transportation projects avoid impacts to Section 4(f) properties such as public parks, recreation lands, wildlife refuges, and historic sites. See Section 3.5, Section 4(f) Resources, for further discussion of these requirements.

Coastal Zone Management Act

The Coastal Zone Management Act (CZMA), established in 1972 and administered by the National Oceanic and Atmospheric Administration's Office of Ocean and Coastal Resource Management, provides for management of the nation's coastal resources. The overall purpose is to balance competing land and water issues in the coastal zone. For San Francisco Bay and the project area, the BCDC (discussed below) is the local coastal zone management agency responsible for issuing consistency determinations

under the CZMA. Therefore, under the CZMA, the project should be consistent with BCDC's plans and policies.

Regional

McAteer-Petris Act (Section 66602)

The McAteer-Petris Act, which created BCDC, included the finding that:

> "...certain water-oriented land uses along the bay shoreline are essential to the public welfare of the Bay Area, and that these uses include ports, water-related industries, airports, wildlife refuges, water-oriented recreation and public assembly, desalinization plants, upland dredged material disposal sites, and powerplants requiring large amounts of water for cooling purposes; that the San Francisco Bay Plan should make provision for adequate and suitable locations for all these uses, thereby minimizing the necessity for future bay fill to create new sites for these uses; that existing public access to the shoreline and waters of San Francisco Bay is inadequate and that maximum feasible public access, consistent with a proposed project, should be provided."

San Francisco Bay Plan

BCDC has permit authority over development of San Francisco Bay and the shoreline pursuant to the McAteer-Petris Act (California Government Code section 66000 et seq.). The Act requires BCDC to prepare a "comprehensive and enforceable plan for the conservation of the water of San Francisco Bay and the development of its shoreline."

BCDC has jurisdiction over all filling, dredging, and changes in use in San Francisco Bay. Furthermore, BCDC regulates new development within 100 feet of the shoreline subject to tidal action, to ensure that maximum public access to San Francisco Bay is provided; and ensures that the limited amount of shoreline suitable for regional high-priority water-oriented uses is reserved for such purposes.

The San Francisco Bay Plan (Bay Plan), adopted in 1969, is the BCDC policy document that specifies goals, objectives, and policies for BCDC jurisdictional areas for the entire Bay Area (BCDC, 2008).

Additionally, the Bay Plan contains policies relevant to the San Francisco Bay Trail Plan (Bay Trail Plan) (see Bay Trail Plan discussion below).

The major public access and recreation Bay Plan policies related to the project are presented below.

Findings and Policies Concerning Public Access to San Francisco Bay. Bay Plan findings and policies that concern public access to San Francisco Bay include the following:

> ***Public Access Finding (a).*** San Francisco Bay is a dominant feature of the nine-county Bay Area and affords a variety of habitats for many diverse plant and wildlife populations. It provides an environment for numerous forms of public enjoyment including viewing, photography, wildlife observation, nature study, fishing, wading, walking, bicycling, jogging, or just sitting beside the water. As an outstanding visual resource, San Francisco Bay is an important focal point for the entire region that serves to orient people to its various parts.
>
> ***Public Access Finding (b).*** Public access can provide for recreational activities, educational and interpretive opportunities, and means for alternative transportation.
>
> ***Public Access Finding (c).*** Public access required by the BCDC is an integral component of development and usually consists of pedestrian and other nonmotorized access to and along the shoreline of San Francisco Bay. It may include certain improvements, such as paving, landscaping,

and street furniture; and it may allow for additional uses, such as bicycling, fishing, picnicking, nature education, etc. Visual access to San Francisco Bay is a critical part of public access. In projects that cannot provide onsite public access due to safety or use conflicts, including significant adverse effects on wildlife, in lieu public access may be appropriate.

Public Access Finding (d). The BCDC has adopted advisory "Public Access Design Guidelines" to assist in the siting and design of public access to San Francisco Bay. The Design Review Board was formed in 1970 of professional designers to advise the BCDC on the adequacy of public access of proposed projects in accordance with the Bay Plan.

Public Access Policy 8. Access to and along the waterfront should be provided by walkways, trails, or other appropriate means, and connect to the nearest public thoroughfare where convenient parking or public transportation may be available.

Public Access Policy 10. Federal, state, regional, and local jurisdictions, special districts, and the BCDC should cooperate to provide appropriately sited, designed, and managed public access, especially to link the entire series of shoreline parks, regional trail systems (such as the Bay Trail), and existing public access areas to the extent feasible, without additional Bay filling and without significant adverse effects on natural resources in San Francisco Bay. State, regional, and local agencies that approve projects should ensure that provisions for public access to and along the shoreline are included as conditions of approval and that the access is consistent with the BCDC requirements and guidelines.

Public Access Policy 11. The Public Access Design Guidelines should be used as a guide to siting and designing public access consistent with a proposed project.

Recreation Policy 4.a(6). Bay Trail segments should be located near the shoreline unless that alignment would have significant adverse effects on Bay resource.

Recreation Finding L. The goal of the Bay Trail project is to create a continuous, multiple-use trail around San Francisco Bay that can be used for hiking, jogging, bicycling, and other nonmotorized uses, and that connects shoreline parks.

San Francisco Waterfront Special Area Plan

The San Francisco Waterfront SAP, an amendment to the Bay Plan, focuses exclusively on the San Francisco Waterfront from India Basin to the Aquatic Park (BCDC, 2000). The SAP was developed in coordination with the City and County of San Francisco, and applies the requirements of the McAteer-Petris Act and the provisions of the Bay Plan to the San Francisco waterfront in greater detail than the Bay Plan. This section discusses the elements relevant to parklands and recreation; please see Section 3.3, Land Use and Planning, for SAP policies related to land use.

The SAP policies related to parklands and recreation that are most relevant to the proposed project are as follows:

Open Water Basins. Permitted uses include:

- Water-Related Recreation;
- Water Transportation (e.g., ferries, water taxis, and excursion boats); and
- Limited Public Access.

Policy 1. Open Water Basins should be focal points for public use and enjoyment of the Northeastern Waterfront. Open Water Basins should provide opportunities for physical access between San

Francisco Bay and the piers, and should provide new and substantial San Francisco Bay views from the boundary piers framing the Open Water Basins.

Open Water Areas. Permitted uses include:

- Water-Related Recreation;
- Water Transportation (e.g., ferries, water taxis, and excursion boats); and
- Bay-Oriented Commercial Recreation and Bay-Oriented Public Assembly.

Public Access. The McAteer-Petris Act requires that projects in BCDC's jurisdiction provide the maximum feasible public access, and accommodate uses such as bicycling, fishing, picnicking, and nature education.

Policy 1. Public access should be provided free of charge to the public, and should provide direct connections to San Francisco Bay, both physical and visual.

Policy 2. Public access should generally be accessible at any time; however, reasonable restrictions on public access may be approved to promote public safety and security.

Policy 3. Public access should emphasize passive recreation and focus on the proximity to San Francisco Bay, the view, and the unique experiences that nearness to San Francisco Bay affords.

Policy 10 Public Access Siting and Design. Policy 10 includes the following requirements:

a. On-pier public access areas should be located to take advantage of the Open Water Basins, views of San Francisco Bay and its shoreline, views back to the City, wind protection, and solar access. They should incorporate unique and special amenities that draw the public to them, including cultural expression, (e.g., public art, event programming, or unique views).

b. Except as otherwise provided in this SAP, public access on new fill should not contribute towards meeting the required public access on finger piers, unless the fill would replace a former pier apron that was removed, or existing deteriorated apron areas where the apron is necessary to connect existing pier apron(s) to Herb Caen Way or other open space areas.

Policy 13. Public access areas should be designed and improved, consistent with the project as follows:

j. public access improvements provided for projects within the Northeastern Waterfront should be designed to be low maintenance and should be maintained by the responsible party;

k. queues for excursion boats and ferries should be managed so that continuous shoreline public access is maintained and no permanent or semi-permanent structures prevent access to the shoreline.

General Policies

Policy 6 Required Public Access. Policy 6 includes the following requirements:

a. In accordance with general Bay Plan policies, maximum feasible public access should be provided in conjunction with any development in the area covered by this SAP. Public access should be located at ground or platform level, but minor variations in elevation intended to enhance design of open space may be permitted. Public access should also be open to the sky, although some covering may be allowed if it serves the public areas and does not support structures. Particular attention should be given to the provision of perimeter public access along the platform edge. Other uses may extend to the platform edge subject to the following conditions:

ii) Such uses should enhance the total design of the project, should serve to make the public access more interesting, and should not divert the public way along more than 20 percent of the total platform edge.

iii) Deviations of the public way from the platform edge should be limited to short distances.

b. Development of public access should be required as a condition of permits for new maritime and nonmaritime development. The location of such access obtained as a condition of maritime development between Channel Street and India Basin should be guided by the designations for public recreation, open space, and public access.

San Francisco Bay Trail Plan

The Bay Trail Plan was prepared by the Association of Bay Area Governments (ABAG) pursuant to Senate Bill 100, which mandated that the Bay Trail provide connection to existing parks and recreation facilities, create links to existing and proposed transportation facilities, and avoid adverse effects on environmentally sensitive areas. The Bay Trail Plan proposes an alignment of 400-mile recreational "ring around the Bay." The Bay Trail's purpose is to create connections between more than 130 parks and publicly accessible open space areas around San Francisco and San Pablo bays. Furthermore, the Bay Trail will provide access to a wide array of commercial ferries and public boat launches. Bay Trail policies and design guidelines are intended to complement the adopted regulations and guidelines of local managing agencies. Relevant trail alignment policies include connections of the Bay Trail to other local and regional trail and bikeway systems to provide alternatives to automobile access to the Bay Trail. Bay Trail policies encourage access to the trail by all forms of public transit (ABAG, 1999).

Local

San Francisco General Plan

Recreation and Open Space Element. Policies of the General Plan Recreation and Open Space Element (SF Planning, 1986) include the creation of a recreational trails system to link city parks and public open space with the neighborhoods. The General Plan calls for a generous and well-maintained shoreline strip to provide public access and accommodate development of a continuous pedestrian and bicycle shoreline trail system.

Policies related to the project area include the improvement of physical access to and along the waterfront by linking the open spaces in the Ferry Building area, including the Ferry Building Plaza, the Ferry Plaza (the Bay side of the Ferry Building), the Embarcadero Promenade, and public access features as part of new developments on Piers 1 and ½, and between the Ferry Building and the Agriculture Building. The General Plan calls for these spaces to be designed to accommodate high volumes of people using waterborne and landside transit services at and near the Ferry Building. Furthermore, it requires provision of a mixture of commercial and recreational maritime activities, such as ferries, excursion boats, historic ships, and water taxis.

Relevant recreation and open space policies include:

Policy 3.1. Ensure that new development adjacent to the shoreline capitalizes on its unique waterfront location, considers shoreline land use provisions, improves visual and physical access to the water, and conforms with urban design policies.

Policy 3.3. Create the Bay and Coastal Trails around the perimeter of the City of San Francisco which links open space along the shoreline and provides for maximum waterfront access.

Policy 3.5. Provide new public open spaces along the shoreline.

Northeast Waterfront Area Plan

The overall goal of the Northeast Waterfront Area Plan is to create a physical and economic environment in the Northeastern Waterfront area that allows use of the area's resources and potential in the manner that best serves the needs of the San Francisco community.

Relevant parklands and recreation policies of the Northeast Waterfront Area Plan include:

Policy 5.5. Encourage Bay-oriented commercial recreation and public assembly uses on piers, which include public access and complementary maritime activities (e.g., cruises, excursions, ferries, historic ships), and maritime support services.

Policy 7.8. Require the inclusion of a substantial amount of public open space and peripheral public access to the water's edge when major new mixed-use developments occur. Provide connections between these open spaces and public access areas to create a "PortWalk" that is integrated with sidewalk and pedestrian improvements along The Embarcadero (the Embarcadero Promenade) which, between King Street and Jefferson Street, coincides with the regional Bay Trail. Public access should be located at ground or platform level, but minor variations in elevation intended to enhance design of open space may be permitted. Public access should also be open to the sky, although some covering may be allowed if it serves the public areas and does not support structures. Particular attention should be given to the provision of perimeter public access along the platform edge. Other uses may extend to the platform edge, subject to the following conditions: (a) such uses should enhance the total design of the project, should serve to make the public access more interesting, and should not divert the public way along more than 20 percent of the total platform edge; and (b) deviations of the public way from the platform edge should be limited to short distances.

Policy 7.9. Provide as much public open space and peripheral access as is feasible in areas of maritime activity without interfering with the operation of this activity.

Policy 10.19. On nonmaritime piers with sheds, provide continuous peripheral pedestrian public access ways for walking, viewing, and fishing. Provide benches and street furniture. Prohibit use of designated public access areas for valet parking, auto drop-off, or trash storage, but allow emergency vehicle access and, if no feasible alternatives exist, service vehicle access.

Policy 10.20. Provide continuous public pedestrian access to San Francisco Bay on the east side of the Ferry Building that is separate from any service vehicle access to the Building.

The Port of San Francisco Waterfront Land Use Plan

As identified in Section 3.3, one of the highest priorities of the Waterfront Plan is to restore the Ferry Building to its historic role as a transportation hub and centerpiece of the waterfront (Port, 2004). The goals of the Waterfront Plan encourage and foster a balance of uses and activities on the waterfront, including open space and recreation. The Waterfront Plan includes the following parkland recreational policies:

Policy 2.b. Including new public access improvements, such as walkways and viewing areas, as part of any substantial facility upgrade for commercial and recreation-oriented maritime operations (e.g., ferry and excursion boats, cruise ships, recreational boating), if financially feasible.

Design and Access Element. The Waterfront Design and Access Element addresses the nature of public access and open spaces along the waterfront. It includes special emphasis on public access and open

spaces, and provides design criteria for the PortWalk, which creates continuous waterfront pedestrian access from the Embarcadero Promenade south of the Agriculture Building to the south edge of Pier 1.

3.4.3 Impact Evaluation

The analysis considers whether the project would:

- Increase the use of existing parklands, open spaces, and trails enough that substantial physical deterioration of the facility would occur or be accelerated;
- Include recreation facilities or require the construction or expansion of recreation facilities that may have an adverse physical effect on the environment;
- Result in impacts on recreation resources; or
- Conflict with applicable recreation and public access plans and policies.

The proposed project includes the construction of new and improved public access facilities, so the potential impacts of these facilities are analyzed throughout this Environmental Impact Statement/ Environmental Impact Report.

The analysis evaluates the project's potential to directly and indirectly affect parklands, open space, trails, and other recreation facilities. The analysis includes an assessment of the permanent and temporary (i.e., construction-related) impacts on adjacent parklands and recreation facilities from the proposed project, including impacts associated with additional pedestrian traffic in the area. For the purposes of this analysis, recreation facilities are considered to include public access trails and paths used by the public.

The analysis describes whether the project would conflict with recreational and public access plans and policies that apply to the project area. The evaluation of consistency with plans is organized by the responsible agencies at the federal, state, regional, and local level. Potential conflicts with the federal CZMA are discussed in this section under BCDC policies, because BCDC is the local agency with implementation authority for the CZMA.

Direct Impacts

Impact 3.4-1: Direct Impacts on Recreation Resources

No Action Alternative

No modifications would be made to the Ferry Terminal facilities under the No Action Alternative; therefore, there would be no impacts to recreation resources.

Action Alternative

The Action Alternative would result in the expansion and improvement of recreation facilities such as the Embarcadero Plaza and East Bayside Promenade, resulting in benefits to recreation resources in the project area. San Francisco Bay is a recreation resource in the study area, and is used for recreational boating, including motoring, sailing, and kayaking. The closest marina is at South Beach Harbor, approximately 1 mile to the south, and the closest public boat launch ramp is at Pier 1½, just to the north of the project area. Additionally, both the Broadway and Rincon Point Open Water Basins provide areas for water-related recreation. Implementation of the proposed project would result in the construction of new facilities in San Francisco Bay (e.g., deck and pile structures and gates). However, these facilities would be built in an area already developed and used as a Ferry Terminal. Therefore, these changes would not substantially change the nature of San Francisco Bay's recreation resources in the project area.

NEPA Determination. The project would not result in adverse direct impacts on recreation resources.

California Environmental Quality Act (CEQA) Determination. The proposed project would result in less-than-significant direct impacts on recreation resources.

Impact 3.4-2: Conflict with Recreation and Public Access Plans and Policies

No Action Alternative

Under the No Action Alternative, no modifications would be made to the existing Ferry Terminal facilities to accommodate new or existing Water Emergency Transportation Authority (WETA) services. This could result in longer queues of water transit passengers and potential temporary conflicts with public access at the terminal during passenger boarding. These temporary impediments to public access would conflict with policies that support the flow of pedestrians around the Ferry Terminal, and would result in adverse impacts in the area. However, potential conflicts with public access policies would be limited and would generally occur only during passenger boarding or disembarking. Therefore, the potential conflicts with recreation and public access plans and policies would be negligible.

Action Alternative

Potential conflicts with plans and policies are described by agency below for the proposed project.

BCDC. BCDC plans and policies pertaining to parks and recreation include the requirements of the McAteer-Petris Act and the provisions of the Bay Plan and SAP. Section 66602 of the McAteer-Petris Act states that maximum feasible public access, consistent with the proposed project, should be provided. The SAP directs that the area be accessible to the public, free of charge and at any time; and that it serve as passive recreational areas, focusing on its proximity to San Francisco Bay and on the views and unique experiences that San Francisco Bay affords.

Existing public access at the Ferry Terminal is provided along The Embarcadero and around the Ferry Building, including the Ferry Plaza, and the area between the Agriculture Building and the Ferry Building. As described above and in Chapter 2.0, Alternatives, the proposed project would increase public access around the Ferry Terminal by constructing improvements such as the new Embarcadero Plaza, East Bayside Promenade, North Basin Marginal Wharf Improvements, and Gate A Access Pier. These public access improvements would result in 37,600 square feet of public access space in the project area, the majority of which would be new public access space.[1] These improvements would be consistent with the objectives of the project and would be accessible at any time; provide for passive recreation such as walking, sitting, and viewing; emphasize and facilitate views of San Francisco Bay; and be free to the public. Not only would the project expand physical public access around the Ferry Terminal, it would also increase opportunities for viewing access to San Francisco Bay.

The proposed project would be generally consistent with the public access and recreation policies of the Bay Plan, because it supports public access to San Francisco Bay. Public access would provide views of San Francisco Bay and San Francisco, and would be designed to provide amenities consistent with the public access and siting/design policies of the SAP.

The proposed project would not conflict with the policies of the McAteer-Petris Act, the Bay Plan, or the SAP. The proposed project would require review and approval by the BCDC Design Review Board, which would ensure project consistency with BCDC policies, including BCDC's Public Access Design Guidelines. Therefore, the proposed project would not conflict with BCDC plans and policies.

[1] All of the pier deck constructed in the North Basin and South Basin would be available for public access. As shown in Table 2-2 of Chapter 2 of this Environmental Impact Statement/Environmental Impact Report, approximately 8,000 square feet of pier deck would be constructed in the North Basin for the Gate A Access Pier. None of this area is currently available for public access. In the South Basin, 29,600 square feet of pier deck would be constructed; approximately 9,760 square feet of this currently exists and is generally accessible to the public.

ABAG. The San Francisco Bay Trail, which extends along The Embarcadero on the land side of the Ferry Terminal, is collocated with the Embarcadero Promenade in the vicinity of the proposed project. While the proposed project would not modify the Bay Trail, it would expand the public access in the immediate vicinity of the trail. The proposed project would generally support the goals of ABAG's San Francisco Bay Trail Plan by increasing connections to recreation facilities and furthering links to existing and proposed transportation facilities. The proposed project would not conflict with the policies of the San Francisco Bay Trail Plan and would not result in conflicts with ABAG's plans and policies.

City and County of San Francisco. Implementation of the proposed project would generally be consistent with the policies of the Recreation and Open Space Element of the General Plan and the Northeast Waterfront Area Plan. The proposed project improves visual and physical access to the water and provides open space along the shoreline, consistent with policies 3.1, 3.3, and 3.5. Although the specific project improvements are not described in the General Plan, the project would be generally consistent with plan's vision for the Ferry Building area, because the project would develop and improve open spaces to promote recreational use and enjoyment of the waterfront, and would be designed to accommodate high volumes of people using waterborne and landside transit services at and near the Ferry Building. Consistent with the General Plan, the proposed project would improve physical access to and along the waterfront, especially between the Ferry Building and Agriculture Building. Elements of the project would encourage public assembly on piers, such as at the proposed Embarcadero Plaza; provide open space and access to the extent feasible with the project; and provide continuous public pedestrian access to San Francisco Bay along the east side of the Ferry Building, separated from vehicle access.

Port of San Francisco. Implementation of the Action Alternative would generally be consistent with Port parkland policies. As envisioned in the Waterfront Land Use Plan, the Ferry Building is to be restored to its historic role as a transportation hub and centerpiece for the waterfront. The project would provide new public access improvements, including walkways and viewing areas at a maritime facility, consistent with Policy 2b. During the project approval process, the Port would review the project's consistency with plan goals, as well as its consistency with the Design Criteria for the Ferry Building Area. Therefore, the proposed project would not conflict with Port plans or policies.

NEPA Determination. The project would not conflict with applicable plans and policies pertaining to parks and recreation, and therefore impacts would not be adverse.

CEQA Determination. The proposed project would have less-than-significant direct impacts related to conflicts with applicable plans and policies pertaining to parks and recreation.

Indirect Impacts

Impact 3.4-3: Indirectly Increase the Use of Existing Neighborhood and Regional Parks

No Action Alternative

Under the No Action Alternative, no modifications would be made to the existing Ferry Terminal facilities to accommodate new or existing WETA services. However, the water transit ridership would increase from 5,100 to approximately 7,800 passengers per weekday by 2035; total AM peak-period WETA vessel arrivals would increase from 14 to approximately 20 vessels. The increased number of water transit passengers under the No Action Alternative could result in increased congestion around the Ferry Building during passenger queuing for ferries, thus periodically reducing access along the public pathways at the terminal.

The WETA water transit passengers are primarily commuters, who typically travel between the gates and other downtown destinations. Although passengers may pass through the parks on their way to destinations downtown, they are generally considered to be incidental users of the parks and recreation

facilities in the project area. Incidental use of the parks occurs when passengers use a park for a purpose other than recreation, such as to get to a destination, but do not go to the park as a destination in itself.

The parks and recreation facilities in the immediate vicinity of the proposed project are designed to accommodate high volumes of pedestrian traffic, and the incremental increase in park usage by passengers under the No Action Alternative would not substantially change the existing character of the parks.

The No Action Alternative would result in an incremental increase in the use of parks as passengers pass through the parks, but this increase would not be expected to result in a great enough increase in park use that substantial physical deterioration of recreation facilities would occur or be accelerated. The No Action Alternative would result in less-than-significant impacts due to the potential increased use of parks and recreation facilities. Therefore, the No Action Alternative would not have direct adverse impacts on parks and recreation facilities.

Action Alternative

Under the Action Alternative, the Ferry Terminal facilities would be expanded and improved as described in Chapter 2.0, Alternatives. The proposed project improvements would allow WETA water transit ridership to increase from 5,100 to approximately 25,700 passengers per weekday by 2035, and total AM peak-period WETA vessel arrivals would increase from 14 to approximately 52 to 57 vessels.

Similar to the No Action Alternative, the WETA passengers would be anticipated to be primarily commuters who would typically travel to downtown destinations after disembarking from the vessel. Passengers would incidentally use parks and recreation facilities as they pass through them, resulting in an incremental increase in the use of these spaces. However, the parks through which departing passengers would pass (e.g., the Harry Bridges Plaza and Justin Herman Plaza) are designed for high pedestrian traffic. The incremental increase in users from the proposed project would not be anticipated to result in the substantial deterioration of these park facilities. In addition, the expansion of public facilities (e.g., Embarcadero Plaza and East Bayside Promenade) and improvements to facilities (e.g., pedestrian pathways) at the Ferry Terminal would provide expanded opportunities for passive recreational activities for water transit passengers and other users.

NEPA Determination. The project would not result in adverse impacts associated with the potential increased use of parks and recreation facilities.

CEQA Determination. The proposed project would result in less-than-significant indirect impacts associated with the potential increased use of parks and recreation facilities.

Impact 3.4-4: Indirect Impacts on Recreation Resources

No Action Alternative

San Francisco Bay, a recreation resource in the study area, is used for recreational boating, including motoring, sailing, and kayaking. The closest marina is at South Beach Harbor, approximately 1 mile to the south, and the closest public boat launch ramp is at Pier 54, approximately 1.6 miles to the south. Additionally, both the Broadway and Rincon Point Open Water basins provide areas for water-related recreation. Due to the existing water transit vessel traffic in the project area, recreational users tend to pass through or near project area, rather than to use the project area waters as a destination.

The increase in vessel traffic associated with the No Action Alternative (i.e., an increase from 14 to 20 peak period vessel arrivals) would be consistent with the current nature of the area, which entails heavy use by water transit vessels, recreational boats, and large shipping vessels. Existing recreational users of

San Francisco Bay are accustomed to high vessel traffic in the area, and the incremental increase from the No Action Alternative would not substantially change their experience or the nature of San Francisco Bay as a recreation resource. The No Action Alternative would result in less-than-significant direct impacts on recreation resources.

Action Alternative

As described above, San Francisco Bay is a resource used for recreational activities. However, due to the existing water transit vessel traffic in the project area, recreational users tend to pass through or near project area, rather than to use the project area waters as a destination.

The proposed project improvements would accommodate an increase in water transit vessel traffic in the project area, from 14 to approximately 52 to 57; and the potential for conflicts with recreational users of San Francisco Bay in the project area could increase due to the increased vessel traffic. However, existing users of San Francisco Bay near the project area are accustomed to high vessel traffic, including water transit vessels, recreational boats, and large shipping vessels. In addition, to limit wake impacts to existing berthing facilities and to ensure passenger safety, the vessels are operated under self-imposed procedures to approach berths slowly. This slow approach would reduce the risk of conflicts with San Francisco Bay recreational users that could be passing through the project area. Therefore, the incremental increase in WETA vessels would not substantially change the public's ability to recreate on San Francisco Bay in the project area.

NEPA Determination. Increased vessel traffic would not result in adverse impacts on recreation resources.

CEQA Determination. Increased vessel traffic would result in less-than-significant impacts on recreation resources.

Construction Impacts

The No Action Alternative would not result in any physical changes to the Ferry Terminal, and no construction activities would be required. Therefore, there would be no construction impacts to parklands or recreation facilities.

Impact 3.4-5: Construction Impacts on Recreation Resources

Under the Action Alternative, portions of the existing public access at the Ferry Terminal would be temporarily closed during construction, and new and improved public access facilities would be constructed. This would not result in a great enough increase in the use of existing neighborhood and regional parks or other recreation facilities that substantial physical deterioration of the facility would occur or be accelerated. The proposed project includes the construction of recreation facilities, so the potential impacts of the construction of these facilities are analyzed throughout this Environmental Impact Statement/Environmental Impact Report. The proposed project would not result in construction-related conflicts with applicable plans or policies.

Under the Action Alternative, construction activities at the Ferry Terminal could result in short-term impacts on existing recreation resources in the project area. Public access in the proposed construction zone (shown on Figure 2-9) would be restricted during the construction period. To minimize the area around the Ferry Building that would be affected, the majority of construction activities would be conducted and staged from barges in the construction zone. The Embarcadero Promenade and Bay Trail would be outside the construction zone, and pedestrians could continue to pass through the area. Pedestrian circulation around the Ferry Building would be maintained, as would access to water transit gates and facilities along the Ferry Plaza.

NEPA Determination. Because public access and services at the Ferry Terminal would be maintained during construction, potential impacts to these recreation resources would not be adverse.

CEQA Determination. The proposed project would result in less-than-significant construction-related impacts on parks and recreation facilities.

Cumulative Impacts

Impact 3.4-6: Potential to Result in Cumulative Impacts on Parklands and Recreation

The proposed project would improve and expand recreational facilities along San Francisco's northeastern waterfront. However, new deck and pile structures in San Francisco Bay and the increase in vessel traffic could affect in-water recreational uses. The increase in water transit passengers that would result from implementation of the proposed project would indirectly increase use of existing neighborhood and regional parks in the study area. In addition, during construction, portions of the project area would not be accessible to the public for recreational use. Although the impacts from the proposed project would not be substantial and have been determined to be less than significant and not adverse, other reasonably foreseeable projects in the study area could result in similar impacts. Projects, such as the America's Cup project, the Piers 15 and 17 Exploratorium Relocation, Pier 36 Brannan Street Wharf project, 350 Mission Street, Pier 70 Area, Bay Area Rapid Transit Ferry Plaza Physical Barrier Project, and the Blue Greenway project, would generally involve upgrades to existing infrastructure and public facilities, rehabilitation or replacement of aging facilities, or the development of mixed urban uses on derelict piers, as listed in Table 3.1-1. These projects, in combination with the proposed project, could change existing recreation spaces; create new parks spaces; or result in an increase in residents and workers, who would collectively be expected to increase the use of recreation facilities in the study area. However, the recreation facilities in the study area are urban parklands, open space, and trails designed and constructed to support substantial use, and are capable of serving large numbers of people. In addition, many of the projects under the cumulative condition would construct or improve existing parks/open space areas (including the proposed project), and would be anticipated to generally result in improvements to recreation facilities. The construction activities that could result in a short-term reduction in recreational space available would be unlikely to overlap and, as with the proposed project, it would be anticipated that during construction the projects would accommodate recreational users to minimize disruption. Sufficient recreation facilities would be available to serve the projects, and increased use of these facilities would not result in substantial physical deterioration of recreation resources, nor would they otherwise result in physical degradation of existing recreation resources. Therefore, there would be no cumulative impact on parklands and recreation resources.

NEPA Determination. The project would not contribute to cumulative adverse impacts on recreation resources.

CEQA Determination. Cumulative impacts to parks and recreation in the study area would be less than significant.

3.4.4 Mitigation Measures

Mitigation measures are not required for parks and recreation.

3.5 SECTION 4(f) RESOURCES

3.5.1 Introduction to the Analysis

This section provides analysis to support preliminary determinations necessary to comply with the provisions of 49 United States Code (USC) 303 (hereinafter referred to as Section 4[f]). Section 4(f) properties are publicly owned lands of a park, recreation area, or wildlife and water fowl refuge, or land of a historical site of national, state, or local significance, as determined by the federal, state, regional, or local officials having jurisdiction over the resource. Under Section 4(f), an operating administration of the U.S. Department of Transportation may not approve a project that uses protected properties unless there are no prudent or feasible alternatives, and the project includes all possible planning to minimize harm to such properties.

This chapter describes the statutory requirements associated with Section 4(f), and identifies the potential protected properties in the Downtown San Francisco Ferry Terminal Project (project) area and the use of those properties that would result from the Action Alternative. There would be no potential for impacts to Section 4(f) properties under the No Action Alternative. As described below, the Action Alternative would result in no use of or *de minimis* impacts to Section 4(f) properties.

3.5.2 Affected Environment

This section describes existing Section 4(f) properties in the study area. It also provides a regulatory framework describing applicable laws, policies, and plans relevant to these properties. For the purpose of this analysis, the project's study area encompasses the project area and the properties within approximately 1,000 feet of the project site.

Existing Setting

Project Area

The project is in northeastern San Francisco, along The Embarcadero, between Pier 1 and Pier 14, including all areas west of The Embarcadero. The San Francisco Ferry Building (Ferry Building), the Agriculture Building, the Golden Gate Ferry Terminal, the Ferry Plaza, Pier 2, existing water transit Gates B, C, D, and E, and portions of San Francisco Bay are in the project area.

Study Area

The study area is in downtown San Francisco's diverse mix of urban uses. Although the downtown area is dominated by high-rise buildings, the portion of the study area closest to the water is characterized by smaller-scale commercial structures and large open spaces, such as Justin Herman Plaza and the piers along San Francisco's waterfront. The northern part of the study area is adjacent to Golden Gateway, a waterfront neighborhood containing low- to high-rise residential and commercial development. To the west and south of the project area is the downtown commercial district.

Section 4(f) Properties

Section 4(f) properties in the study area consist of parks and recreation facilities, as well as historic properties and historic districts. No wildlife or waterfowl refuges were identified within the study area. For a park or recreation facility to be considered a Section 4(f) property, its primary use must be for recreation. Therefore, areas that may be used by the recreating public, but whose primary use is other than recreation (e.g., a sidewalk whose purpose is circulation or a retail and commercial space) are not considered Section 4(f) properties.

Section 4(f) Parks and Recreation Areas. Figure 3.4-1 shows the major parklands and open spaces in the study area. Section 4(f) parks and recreation facilities in the study area include several parks and open spaces, as well as two piers under the jurisdiction of either the Port of San Francisco (Port) or the San Francisco Recreation and Park Department for providing recreation and open spaces along the waterfront. These properties are connected by the Herb Caen Way/Embarcadero Promenade (Embarcadero Promenade), which is contiguous with the Bay Trail and the Shoreline Trail in the project area. Brief descriptions of these properties are presented below; additional information about these properties is presented in Section 3.4, Parklands and Recreation. Of the Section 4(f) parks and recreation facilities in the study area, only the Embarcadero Promenade, Bay Trail, and Shoreline Trail pass through the project area.

- Harry Bridges Plaza, the paved area west of the Ferry Building and between The Embarcadero's northbound and southbound lanes, is popular for skateboarding and pedestrian access between the Ferry Building and The Embarcadero, and is under the jurisdiction of the Port.

- Justin Herman Plaza is a 4.3-acre open space at the foot of Market Street, across the street from the Ferry Building, and is characterized by large, open, paved and grassy areas and a large fountain/ sculpture. Justin Herman Plaza, under the jurisdiction of the San Francisco Recreation and Park Department, is used for various activities and group events throughout the year. In the winter, an ice skating rink is created in the plaza. Tables, benches, and steps offer seating opportunities year round.

- Sue Bierman Park, under the jurisdiction of the San Francisco Recreation and Park Department, is a 4.4-acre park, formerly known as Ferry Park, and is situated on the blocks bounded by The Embarcadero and Washington, Davis, and Clay streets.

- Pier 14 is a 637-foot-long public pier, under the jurisdiction of the Port, that was built in Phase I of the project. The pier serves as a breakwater for the South Basin of the Downtown San Francisco Ferry Terminal. Rotating public art installations are displayed on the landside of Pier 14.

- Rincon Park is a 2-acre waterfront grassy area on The Embarcadero at the foot of Folsom Street, between Harrison Street and Howard Street, and is under the jurisdiction of the Port.

- Pier 7, south of Broadway Avenue, is an 840-foot-long public access and fishing pier, under the jurisdiction of the Port, that was reconstructed following the Loma Prieta earthquake in 1989. The pier includes timber decking, ornamental iron handrails, antique-style iron and wooden benches, light fixtures, and benches.

- Herb Caen Way/Embarcadero Promenade is a 25-foot-wide pedestrian promenade, running 2.75 miles along the waterfront between The Embarcadero and the pier bulkhead buildings, from South Beach to Fisherman's Wharf, passing the Ferry Building. The Embarcadero Promenade is under the jurisdiction of the Port, and its contiguous open spaces provide more than 16 acres of public open space. The Promenade is a multi-use pathway designated for recreation, bicycle transportation, maritime functions, and access to piers.

- The San Francisco Bay Trail is contiguous with the Embarcadero Promenade, and therefore under the jurisdiction of the Port. The Bay Trail's purpose is to create connections between more than 130 parks and publicly accessible open space areas in a 400-mile recreational "ring around the Bay." Furthermore, the Bay Trail provides access to a wide array of commercial ferries and public boat launches.

- The Shoreline Trail, identified in the San Francisco General Plan, is also contiguous with the Bay Trail and the Embarcadero Promenade, in the study area.

Section 4(f) Historic Resources. The study area includes three Section 4(f) historic properties: Pier 1, the Ferry Building, and the Agriculture Building. In addition, the study area is in two historical districts: the Port of San Francisco Embarcadero Historic District (Embarcadero Historic District), and the Central Embarcadero Piers Historic District. Section 3.8 – Cultural and Paleontological Resources, includes a detailed description of the historical districts and properties in the study area, along with figures illustrating their locations.

- Pier 1 is on the eastern side of The Embarcadero at the foot of Washington Street. The structure is listed in the National Register of Historic Places (NRHP) for its association with San Francisco maritime commerce and transportation, as well as its architecture, and contributes to the Embarcadero Historic District and to the Central Embarcadero Piers Historic District.

- The Ferry Building, known originally as the Union Ferry Depot Building, is on The Embarcadero at the foot of Market Street. The building is listed in the NRHP for its association with important transportation events, and its significant engineering design.

- The Agriculture Building, originally known as the Ferry Station Post Office Building, is on The Embarcadero at the foot of Mission Street. The building is listed in the NRHP for its architecture, as well as its association with the centralization of San Francisco's postal system.

- The Port of San Francisco Embarcadero Historic District stretches nearly 3 miles along San Francisco's waterfront, from Pier 45 on the north to Pier 48 on the south. The district is listed on the NRHP for its association with important events and people in history, and for its architectural significance. The boundary of this district encompasses only the elements that contribute to the district's overall NRHP eligibility. In the project area, the only contributing element to this district that is not individually eligible for listing in the NRHP is the seawall. The seawall is a linear stone, concrete, and wood embankment that unifies the physical form of the district. In the project area, the seawall is obscured from view by the bulkhead wharves and piers that were built on top of it.

- The Central Embarcadero Piers Historic District, whose contributing elements are Piers 1, 1½, 3, and 5, lies along San Francisco's northeastern waterfront, immediately north of the Ferry Building and the project area. This Historic District is listed in the NRHP for its association with commerce and transportation in San Francisco, as well as its architecture. The boundary of this district encompasses only the elements that contribute to the district's overall NRHP eligibility.

Regulatory Setting

Federal

Department of Transportation Act of 1966 Section 4(f)

Section 4(f) of the Department of Transportation Act of 1966, codified in federal law as 49 USC §303 (commonly referred to as Section 4[f]), declares that "[i]t is the policy of the United States Government that special effort should be made to preserve the natural beauty of the countryside and public park and recreation lands, wildlife and water fowl refuges, and historic sites." Compliance with Section 4(f) is required for transportation projects that may receive federal funding and/or discretionary approvals. The Federal Transit Administration (FTA) may not approve the use of a Section 4(f) property, as defined in 49 USC 303(c), unless it determines: there is no feasible and prudent avoidance alternative to the use of the land and the action includes all possible planning to minimize harm to the property resulting from such use or the project has a *de minimis* impact according to 49 USC § 303(d).

3.5.3 Impact Evaluation

The analysis considers whether the project would:

- Result in a use of any Section 4(f) properties. As defined in 23 Code of Federal Regulations (CFR), Section 771.135(p), the "use" of a protected Section 4(f) resource occurs when any of the following conditions are met:
  - Land is permanently incorporated into a transportation facility through partial or full acquisition (i.e., "direct use").
  - There is a temporary occupancy of land that is adverse in terms of the preservationist purposes of Section 4(f) (i.e., "temporary occupancy").
  - There is no permanent incorporation of land, but the proximity of a transportation facility results in impacts so severe that the protected activities, features, or attributes that qualify a resource for protection under Section 4(f) are substantially impaired (i.e., "constructive use").

Section 4(f) Direct Use

A direct use of a Section 4(f) resource occurs when property is permanently incorporated into a proposed transportation facility (23 CFR, Section 771.135[p][1]). This may occur as a result of partial or full acquisition of a property, permanent easements, or temporary easements that exceed regulatory limits noted in 23 CFR, Section 771.135(p)(7); or when a physical feature of a proposed improvement would directly intersect with a portion or all of the resources, and require the use of property from that resource.

Section 4(f) Temporary Occupancy

A temporary occupancy of a Section 4(f) resource occurs when a property is temporarily occupied, and the occupation is considered adverse in terms of the preservationist purposes of the Section 4(f) statute. Under 23 CFR, Section 771.135(p)(7), a temporary occupancy of property does not constitute a use of a Section 4(f) resource when the following conditions are satisfied:

- The occupancy is of a temporary duration (i.e., shorter than the period of construction) and does not involve a change in ownership of the property.
- The scope of work is minor, with only minimal changes to the protected resource.
- There are no permanent adverse physical effects on the protected resource, and there would be no temporary or permanent interference with activities or the purpose of the resource.
- After the use, the property being used is fully restored to a condition that is at least as good as that which existed prior to the proposed project.
- There must be documented agreement of the appropriate officials having jurisdiction over the resource, regarding the foregoing requirements.

Section 4(f) Constructive Use

A constructive use of a Section 4(f) resource occurs when a transportation project does not permanently incorporate land from the resource, but the proximity of the project results in impacts (e.g., noise, vibration, visual, access, and/or ecological impacts) so severe that the protected activities, features, or attributes that qualify the resource for protection under Section 4(f) are substantially impaired (23 CFR, Section 771.135[p][2]). Substantial impairment occurs only if the protected activities, features, or

attributes of the resource are substantially diminished. This determination is made through the following practices:

- Identification of the current activities, features, or attributes of the resource that may be sensitive to proximity impacts.
- Analysis of the potential proximity impacts on the resource.
- Consultation with the appropriate officials having jurisdictions over the resource (23 CFR, Section 771.135[p][6]).

Section 4(f) De Minimis Impacts

According to Federal Highway Administration/FTA joint guidance on determining *de minimis* impacts on Section 4(f) resources, the impact criteria and requirements specified in 23 CFR Section 774 are different for historic sites than for parks, recreation areas, and wildlife and waterfowl refuges.

A finding of *de minimis* impact on a park, recreation area, or wildlife and waterfowl refuge may be made when:

- The transportation use of the Section 4(f) resource, together with any impact avoidance, minimization, and mitigation or enhancement measures incorporated into the project, does not adversely affect the activities, features, and attributes that qualify the resource for protection under Section 4(f);
- The officials(s) with jurisdiction over the property are informed of the FTA's intent to make a finding of *de minimis* impact based on their agency's written concurrence that the project would not adversely affect the activities, features, and attributes that qualify the resource for protection under Section 4(f); and
- The public has been afforded an opportunity to review and comment on the effects of the project on protected activities, features, and attributes of the Section 4(f) resource.

A finding of *de minimis* impact on a historic site may be made when:

- The process required by Section 106 of the National Historic Preservation Act results in the determination of "no adverse effect" or "no historic properties affected," with the concurrence of the State Historic Preservation Officer (SHPO);
- SHPO is informed of the FTA and sponsoring agency's intent to make a *de minimis* impact finding based on SHPO's written concurrence on the Section 106 determination of effect; and
- FTA has considered the views of any consulting parties participating in the Section 106 consultation.

Analysis of Section 4(f) Use for the No Action Alternative

Under the No Action Alternative, no modifications would be made to the existing Ferry Terminal facilities to accommodate new or existing San Francisco Bay Area Water Emergency Transportation Authority services. Existing park and recreation spaces, historic properties, and historic districts would be unaffected. Therefore, there would be no direct use or indirect impacts that would substantially impair the use of any Section 4(f) properties.

Analysis of Section 4(f) Use for the Proposed Project

Section 4(f) Parks and Recreation Areas

The construction zone for the proposed project is outside the boundaries of any Section 4(f) park or recreation properties. Because no land would be required from these properties, there would be no direct use of these properties as a result of the project.

As discussed in Section 3.2, Transportation and Circulation; Section 3.4, Parklands and Recreation; Section 3.7, Noise and Vibration; and Section 3.10, Aesthetics and Visual Resources, the Action Alternative would not result in indirect impacts that would substantially impair the use of the park and recreation features in the study area. For example, access to these Section 4(f) properties would be maintained during and after construction, and the visual setting of the project would not significantly change. These Section 4(f) properties are in an urban setting, and are not noise-sensitive. Furthermore, noise levels during construction would be in compliance with City and County of San Francisco ordinance. As further discussed in Section 3.4, Parklands and Recreation, the Action Alternative would have a beneficial impact to parks and recreation areas by expanding opportunities for passive recreational activities. Therefore, the Action Alternative would not result in a constructive use of these Section 4(f) properties.

In summary, the Action Alternative would not require the use of any Section 4(f) park or recreation property.

Section 4(f) Historic Properties

Pier 1

The project construction zone is outside the boundaries of Pier 1, except where the wood fendering could be replaced. The Action Alternative may involve the potential replacement of wood fendering along the southern edge of Pier 1, to safely operate vessels at the new Gate A. During the final design of the project, the existing fendering along the southern edge of Pier 1 would be inspected to determine whether replacement is necessary. This replacement would require the removal of 33 wood piles along the southern side of the pier, which would be replaced with 330 linear feet of "chock block" fendering with 33 new wood piles. In the event that the fendering would require replacement, Mitigation Measure CUL-3, presented in Section 3.8, would be required. This measure requires that replacement of the fendering be constructed consistent with the *Secretary of the Interior's Standards for the Treatment of Historic Properties, Standards for Rehabilitation* (NPS, 2001). Additionally, because inadvertent damage to Pier 1 during construction could result in an adverse effect, implementation of Mitigation Measure CUL-4 requires demarcation of the construction zone, to reduce the potential for inadvertent damage; and implementation of a response and repair plan, should any inadvertent damage occur during construction. These measures would avoid and minimize potential adverse effects. With the implementation of CUL-3 and CUL-4, the project would result in "no adverse effect" to Pier 1. SHPO concurred with this determination on April 15, 2013.

As described in Section 3.8, Cultural Resources, other new project elements would be in keeping with the existing scale and visual context of the area, and would not result in the introduction of visual elements that diminish the integrity of the property's significant historic features, nor result in adverse effects to the historic properties. The noise caused by construction activities, as well as project operations, would not cause indirect adverse effects to historic properties or resources. The analysis of construction vibration concluded that vibration has the potential to result in damage to the individual historic properties or resources in the study area. Mitigation Measure NOISE-3, presented in Section 3.7, requires the selection of appropriate pile-driving techniques based on the distance from existing buildings; vibration monitoring during construction; and that work be ceased and corrective measures or alternative construction methods be

implemented should vibration monitoring indicate the threshold would be exceeded. Therefore, implementation of Mitigation Measure NOISE-3 would avoid indirect adverse effects to Pier 1. SHPO concurred with this determination on April 15, 2013.

Therefore, in accordance with 23 CFR 774.5, FTA has determined that the Action Alternative would have a *de minimis* impact on Pier 1.

Ferry Building

The construction zone for the Action Alternative is outside the boundary of the Ferry Building; therefore, there would be no direct use of this Section 4(f) property.

As discussed in Section 3.8, Cultural Resources, new project elements would be in keeping with the existing scale and visual context of the area, and would not result in the introduction of visual elements that diminish the integrity of the property's significant historic features, or adversely affect the historic property. Mitigation Measure CUL-6 requires that final design of the weather protection canopies be developed in consultation with local agencies, and consistent with the *Secretary of the Interior's Standards for the Treatment of Historic Properties, Standards for Rehabilitation* (NPS, 2001). Although adverse impacts are not anticipated based on the preliminary design, implementation of Mitigation Measure CUL-6, presented in Section 3.8, would ensure that indirect adverse visual effects from the final design of the weather protection canopy element of the proposed project are avoided for the Ferry Building. The consultation and application of the Secretary of the Interior's Standards would ensure that historic integrity is retained, and that the property would remain eligible for listing in the NRHP and California Register of Historical Resources. Additionally, because inadvertent damage to the Ferry Building during construction could result in an adverse effect, implementation of Mitigation Measure CUL-4 would avoid and minimize potential adverse effects from inadvertent damage. Therefore, with implementation of CUL-4 and CUL-6, the project would result in "no adverse effect" to this historic property. SHPO concurred with this determination on April 15, 2013.

The noise caused by construction activities and project operations would not cause indirect adverse effects to historic properties/resources. With the implementation of Mitigation Measure NOISE-3, presented in Section 3.7, there would be no indirect adverse effects to this historic property as a result of vibration. Therefore, the Action Alternative would not result in proximity impacts that would substantially impair this Section 4(f) property, resulting in "no adverse effect" to this historic property. SHPO concurred with this determination on April 15, 2013.

Therefore, there would be no Section 4(f) use of the Ferry Building.

Agriculture Building

The construction zone for the Action Alternative is outside the boundary of any portion of the Agriculture Building; therefore, there would be no direct use of this Section 4(f) property.

Similar to the Ferry Building, described above, and as discussed in Section 3.8, Cultural Resources, the Action Alternative's project elements would not diminish the integrity of the property's significant historic features, nor adversely affect this historic property. Implementation of Mitigation Measure CUL-6 would ensure that indirect adverse visual effects from the final design of the weather protection canopy element of the proposed project are avoided for the Agriculture Building. Additionally, because inadvertent damage to the Agriculture Building during construction could result in an adverse effect, implementation of Mitigation Measure CUL-4 would avoid and minimize potential adverse effects from inadvertent damage. The noise caused by construction activities and project operations would not cause indirect adverse effects to historic properties/resources. With the implementation of Mitigation Measure NOISE-3, presented in Section 3.7 there would be no indirect adverse effects to this historic

property as a result of vibration. Therefore, the Action Alternative would not result in proximity impacts that would substantially impair this Section 4(f) property, resulting in "no adverse effect" to this historic property. SHPO concurred with this determination on April 15, 2013.

Therefore, there would be no Section 4(f) use of the Agriculture Building.

Port of San Francisco Embarcadero Historic District

The boundaries of the district encompass only the elements that contribute to the district's overall NRHP eligibility; and in the study area, this is limited to Pier 1 and the seawall. The potential use associated with Pier 1 is described above. The project would not result in a direct impact to the seawall, and would result in no actual Section 4(f) use of the seawall. However, as described above, the Action Alternative would impact Pier 1—a contributing feature to the district. With the implementation of CUL-3, the project would result in "no adverse effect" to Pier 1 from fendering replacement, because the replacement of fendering would be consistent with the *Secretary of the Interior's Standards for the Treatment of Historic Properties*, *Standards for Rehabilitation* (NPS, 2001). Additionally, because inadvertent damage to the Pier 1 during construction could result in an adverse effect, implementation of Mitigation Measure CUL-4 would avoid and minimize potential adverse effects from inadvertent damage. Therefore the project would have "no adverse effect" on Pier 1. SHPO concurred with this determination on April 15, 2013. The project is not anticipated to cause a direct adverse effect to historic properties/ resources, because construction or demolition would not—with the aforementioned exception of the possible fendering removal at Pier 1—damage, destroy, or otherwise alter, in whole or in part, contributing or individually eligible historic properties or resources.

New project elements would be in keeping with the existing scale and visual context of the area, and would not result in the introduction of visual elements that diminish the integrity of the property's significant historic features, or adversely affect the historic property. Mitigation Measure CUL-6 requires that final design of the weather protection canopies be developed in consultation with local agencies, and be consistent with the *Secretary of the Interior's Standards for the Treatment of Historic Properties*, *Standards for Rehabilitation* (NPS, 2001). Although adverse impacts are not anticipated based on the preliminary design, implementation of Mitigation Measure CUL-6 would ensure that indirect adverse visual effects from the final design of the weather protection canopy element of the proposed project are avoided for the Port of San Francisco Embarcadero Historic District. The noise caused by construction activities and project operations would not cause indirect adverse effects to historic properties/resources. Although there may be indirect impacts to the contributing seawall as a result of vibration, with the implementation of Mitigation Measure NOISE-3, presented in Section 3.7, the Action Alternative would result in "no adverse effect" to this contributing element.

The Action Alternative would result in "no adverse effect" to the Port of San Francisco Embarcadero Historic District. SHPO concurred with this determination on April 15, 2013. Therefore, in accordance with 23 CFR 774.5, FTA has determined the Action Alternative would have a *de minimis* impact to the Port of Embarcadero Historic District.

Central Embarcadero Piers Historic District

The Action Alternative would require construction within the boundaries of the Central Embarcadero Piers Historic District. The boundaries of the district encompass only the elements that contribute to the district's overall NRHP eligibility; and in the study area, this is limited to Pier 1. As described above, the Action Alternative would impact Pier 1—a contributing feature to the district. With the implementation of Mitigation Measure CUL-3 and CUL-4, the project would result in "no adverse effect" to Pier 1. SHPO concurred with this determination on April 15, 2013. The project is not anticipated to cause a direct adverse effect to historic properties or resources, because construction or demolition would not—

with the aforementioned exception of the possible fendering removal at Pier 1—damage, destroy, or otherwise alter, in whole or in part, contributing or individually eligible historic properties or resources.

New project elements would be in keeping with the existing scale and visual context of the area, and would not result in the introduction of visual elements that diminish the integrity of the property's significant historic features, or adversely affect the historic property. Mitigation Measure CUL-6 requires that final design of the weather protection canopies be developed in consultation with local agencies, and be consistent with the *Secretary of the Interior's Standards for the Treatment of Historic Properties*, *Standards for Rehabilitation* (NPS, 2001). Although adverse impacts are not anticipated based on the preliminary design, implementation of Mitigation Measure CUL-6 would ensure that indirect adverse visual effects from the final design of the weather protection canopy element of the proposed project are avoided for the Central Embarcadero Piers Historic District. The noise and vibration caused by construction activities and project operations would not cause indirect adverse effects to historic properties/resources. The Action Alternative would result in no adverse effect to Central Embarcadero Piers Historic District. SHPO concurred with this determination on April 15, 2013.

Therefore, in accordance with 23 CFR 774.5, FTA has determined the Action Alternative would have a *de minimis* impact to the Central Embarcadero Piers Historic District.

3.5.4 Mitigation Measures

Mitigation measures referenced in this section are described in detail in Section 3.7 and 3.8.

3.6 AIR QUALITY AND GLOBAL CLIMATE CHANGE

3.6.1 Introduction to the Analysis

This section summarizes the existing air quality conditions in the local air basin, describes the air quality and climate change regulations applicable to the proposed project, identifies the analysis methodology, and discusses the potential impacts that the project alternatives may have on air quality and climate change. Applicable thresholds applied to the project's potential emissions include those established by federal transportation conformity regulations, and by the Bay Area Air Quality Management District's (BAAQMD's) *CEQA (California Environmental Quality Act) Air Quality Guidelines*. Appendix B details the methods and assumptions used to estimate construction and operational emissions from project alternatives. This analysis has determined that the proposed project, with the implementation of mitigation measures, would not result in adverse impacts on air quality or climate change.

3.6.2 Affected Environment

This section describes the air quality and global climate change environmental and regulatory setting. Meteorological data are discussed, including temperature and precipitation; and ambient concentrations for the appropriate criteria pollutants are summarized. Toxic air contaminants (TACs) are also discussed. The regulatory discussion includes sections on federal, state, and local air quality and global climate change laws, rules, and regulations as they pertain to the proposed project.

Air Quality Setting

Climate and Meteorology

The project area is located within the San Francisco Bay Area Air Basin (SFBAAB). The project area is within the jurisdiction of the BAAQMD. BAAQMD is the primary agency responsible for air quality regulation in the 9-county SFBAAB. San Francisco's proximity to onshore breezes stimulated by the Pacific Ocean provide for generally very good air quality in the project area.

The SFBAAB is characterized by complex terrain, consisting of coastal mountain ranges, inland valleys, and bays, which distort normal wind flow patterns. The Coast Range splits wind flows, resulting in a western coast gap (Golden Gate) and an eastern coast gap (Carquinez Strait), which allows air to flow in and out of the SFBAAB and the Central Valley.

During the summer, winds flowing from the northwest are drawn inland through the Golden Gate and over the lower portions of the San Francisco Peninsula, such as through the San Bruno Gap. Immediately south of Mount Tamalpais, the northwesterly winds accelerate considerably and come more directly from the west as they stream through the Golden Gate. This channeling of wind through the Golden Gate produces a jet that sweeps eastward and splits off to the northwest toward the City of Richmond, and to the southwest toward the City of San Jose when it meets the East Bay hills. The San Bruno Gap extends from Fort Funston on the ocean to the San Francisco Airport. Because the gap is oriented in the same northwest-to-southeast direction as the prevailing winds, and because the elevations along the gap are less than 200 feet, marine air is easily able to penetrate into San Francisco Bay.

Wind speeds may be strong locally in areas where air is channeled through a narrow opening, such as the Carquinez Strait, the Golden Gate, or the San Bruno gap. For example, the average wind speed at San Francisco International Airport in July is about 17 knots (from 3 p.m. to 4 p.m.), compared with only 7 knots at San Jose (BAAQMD, 2011).

The air flowing in from the coast to the Central Valley, called the sea breeze, begins developing at or near ground level along the coast in late morning or early afternoon. As the day progresses, the sea breeze layer deepens and increases in velocity while spreading inland. The depth of the sea breeze depends in large part upon the height and strength of the inversion. If the inversion is low and strong (and hence stable), the flow of the sea breeze will be inhibited, and stagnant conditions are likely to result.

In the winter, the SFBAAB frequently experiences stormy conditions with moderate to strong winds, as well as periods of stagnation with very light winds. Winter stagnation episodes are characterized by nighttime drainage flows in coastal valleys. Drainage is a reversal of the usual daytime air-flow patterns; air moves from the Central Valley toward the coast and back down toward San Francisco Bay from the smaller valleys within the SFBAAB (BAAQMD, 2011). The predominant wind direction in the project vicinity is from west to east (BAAQMD, 2012a).

The climate is dominated by the strength and location of a semi-permanent, subtropical high-pressure cell. During the summer, the Pacific high pressure cell is centered over the northeastern Pacific Ocean, resulting in stable meteorological conditions and a steady northwesterly wind flow. Upwelling of deep cold ocean water to the surface produces a band of cold water off the California coast. The cool and moisture-laden air approaching the coast from the Pacific Ocean is further cooled by the presence of the cold water band, resulting in condensation and the presence of fog and stratus clouds along the Northern California coast.

In the winter, the Pacific high-pressure cell weakens and shifts southward, resulting in wind flow offshore, curtailing upwelling, and causing storms. Weak inversions coupled with moderate winds result in a low air pollution potential.

Summertime temperatures in the SFBAAB are determined in large part by the effect of differential heating between land and water surfaces. Because land tends to heat up and cool off more quickly than water, a large-scale gradient (differential) in temperature is often created between the coast and the Central Valley, and small-scale local gradients are often produced along the shorelines of the ocean and bays. The temperature gradient near the ocean is also exaggerated, especially in summer, because of the upwelling of cold ocean bottom water along the coast. On summer afternoons, the temperatures at the coast can be 35 degrees Fahrenheit cooler than temperatures 15 to 20 miles inland. At night, this contrast usually decreases to less than 10 degrees Fahrenheit (BAAQMD, 2011).

In the winter, the relationship of minimum and maximum temperatures is reversed. During the daytime the temperature contrast between the coast and inland areas is small, and at night the variation in temperature is large.

The SFBAAB is characterized by moderately wet winters and dry summers. Winter rains account for about 75 percent of the average annual rainfall. The amount of annual precipitation can vary greatly from one part of the SFBAAB to another, even within short distances. In general, total annual rainfall can reach 40 inches in the mountains, but it is often less than 16 inches in sheltered valleys (BAAQMD, 2011).

Ambient Air Quality – Criteria Air Pollutants

Table 3.6-1 (on the following page) summarizes air quality monitoring data collected by the BAAQMD in San Francisco for the period 2006 to 2011. Table 3.6-2 (on the second page following) lists the state and federal ambient air quality standards.

Table 3.6-1
Summary of San Francisco Air Quality Monitoring Data (2006-2011)

Pollutant	Most Stringent Applicable Standard	2006	2007	2008	2009	2010	2011
Ozone							
Days 1-Hour Standard Exceeded[1]		0	0	0	0	0	0
Maximum 1-Hour Concentration (pphm)	> 9 pphm[2]	5	6	8	7	8	7
Days 8-Hour Standard Exceeded[1]		0	0	0	0	0	0
Maximum 8-Hour Concentration (pphm)	> 7 pphm	5	5	7	6	5	5
Carbon Monoxide							
Days 1-Hour Standard Exceeded[1]		0	0	0	ND	ND	ND
Maximum 1-Hour Concentration (ppm)	> 20 ppm[2]	2.9	2.7	5.7	ND	ND	ND
Days 8-Hour Standard Exceeded[1]		0	0	0	0	0	0
Maximum 8-Hour Concentration (ppm)	> 9 ppm[2]	2.1	1.6	2.3	2.9	1.4	1.2
PM_{10}							
-Days 24-Hour Standard Exceeded[1, 4]		**3**	**2**	0	0	0	0
Maximum 24-Hour Concentration (µg/m^3)	> 50 µg/m^3[2]	**61**	**70**	41	36	40	46
$PM_{2.5}$							
Days 24-Hour Standard Exceeded[1, 4,5]		**3**	**5**	0	**1**	**3**	**2**
Maximum 24-Hour Concentration (µg/m^3)	>35 µg/m^3 [3]	**54**	**45**	29	**37**	**45**	**48**
Annual Average (µg/m^3)	>12 µg/m^3[2]	9.7	8.7	9.8	ND	11	10
Nitrogen Dioxide							
Days 1-Hour Standard Exceeded[1]		0	0	0	0	0	0
Maximum 1-Hour Concentration (pphm)	>25 pphm[2]	11	7	6	6	9	9
Sulfur Dioxide							
Days 24-Hour Standard Exceeded[1]		0	0	0	ND	ND	ND
Maximum 24-Hour Concentration (ppb)	>40 ppb[2]	6	6	4	ND	ND	ND

Source: CARB, 2012a.

Notes:

Monitoring station is located at 10 Arkansas Street, San Francisco, CA.

Bold values are in excess of applicable standard.

[1] Number of days exceeded is for all days in a given year, except for particulate matter. PM_{10} and $PM_{2.5}$ are monitored every six days and therefor the number of days exceeded is out of approximately 60 annual samples.

[2] State standard, not to be exceeded.

[3] Federal standard, not to be exceeded.

[4] Based on a sampling schedule of one out of every six days, for a total of approximately 60 samples per year.

[5] Federal standard was reduced from 65 µg/m^3 to 35 µg/m^3 in 2006.

> = greater than
µg/m^3 = micrograms per cubic meter
ND = data is unavailable
$PM_{2.5}$ = particulate matter equal to or less than 2.5 micrometers in diameter
PM_{10} = particulate matter equal to or less than 10 micrometers in diameter
pphm = parts per hundred million
ppb = parts per billion
ppm = parts per million

Table 3.6-2
Relevant Federal and California Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards[1]	Federal Standards[2]	
		Concentration[3]	Primary[3,4]	Secondary[3,5]
Ozone	1 Hour	0.09 ppm (180 µg/m^3)	—	Same as Primary Standard
	8 Hour	0.070 ppm (137 µg/m^3)	0.075 ppm (147 µg/m^3)	
Respirable Particulate Matter (PM_{10})	24 Hour	50 µg/m^3	150 µg/m^3	Same as Primary Standard
	Annual Arithmetic Mean	20 µg/m^3	—	
Fine Particulate Matter ($PM_{2.5}$)	24 Hour	No Separate State Standard	35 µg/m^3	Same as Primary Standard
	Annual Arithmetic Mean	12 µg/m^3	12 µg/m^3	15 µg/m^3
Carbon Monoxide	8 Hour	9.0 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)	None
	1 Hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)	
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m^3)	—	—
Nitrogen Dioxide	Annual Arithmetic Mean	0.030 ppm (57 µg/m^3)	53 ppb (100 µg/m^3) (see footnote 6)	Same as Primary Standard
	1 Hour	0.18 ppm (339 µg/m^3	100 ppb (188 µg/m^3) (see footnote 6)	None
Sulfur Dioxide	24 Hour	0.04 ppm (105 µg/m^3)	—	—
	3 Hour	—	—	0.5 ppm (1,300 µg/m^3) (see footnote 7)
	1 Hour	0.25 ppm (655 µg/m^3)	75 ppb (196 µg/m^3) (see footnote 7)	—
Lead[8]	30-Day Average	1.5 µg/m^3	—	—
	Calendar Quarter	—	1.5 µg/m^3	Same as Primary Standard
	Rolling 3-Month Average[9]	—	0.15 µg/m^3	

Table 3.6-2
Relevant Federal and California Ambient Air Quality Standards (Continued)

Pollutant	Averaging Time	California Standards[1]	Federal Standards[2]	
		Concentration[3]	Primary[3,4]	Secondary[3,5]
Visibility-Reducing Particles	8 Hour	Extinction coefficient of 0.23 per kilometer — visibility of 10 miles or more (0.07 — 30 miles or more for Lake Tahoe) due to particles when relative humidity is less than 70 percent. Method: Beta Attenuation and Transmittance through Filter Tape.	No Federal Standards	
Sulfates	24 Hour	25 µg/m^3		
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m^3)		
Vinyl Chloride[8]	24 Hour	0.01 ppm (26 µg/m^3)		

Source: CARB, 2012b.

Notes:

[1] California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, suspended particulate matter—PM_{10}, $PM_{2.5}$, and visibility-reducing particles—are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

[2] National standards (other than ozone, particulate matter (PM_{10} and $PM_{2.5}$), and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth-highest 8-hour concentration in a year, averaged over 3 years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m^3 is equal to or less than one. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over 3 years, are equal to or less than the standard. Contact U.S. EPA for further clarification and current federal policies.

[3] Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25 degrees Celsius and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25 degrees Celsius and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

[4] National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.

[5] National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

[6] To attain this standard, the 3-year average of the 98th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 0.100 ppm (effective January 22, 2010). Note that the U.S. EPA standards are in ppb. California standards are in ppm. To directly compare the national standards to the California standards the units can be converted from ppb to ppm. In this case, the national standards of 53 ppb and 100 ppb are identical to 0.053 ppm and 0.100 ppm, respectively.

[7] On June 2, 2010, the U.S. EPA established a new 1-hour SO_2 standard, effective August 23, 2010, which is based on the 3-year average of the annual 99th percentile of 1-hour daily maximum concentrations. The U.S. EPA also revoked both the existing 24-hour SO_2 standard of 0.14 ppm and the annual primary SO_2 standard of 0.030 ppm, effective August 23, 2010. The secondary SO_2 standard was not revised at that time; however, the secondary standard is undergoing a separate review by the U.S. EPA. Note that the new standard is in ppb. California standards are in ppm. To directly compare the new primary national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.

[8] The California Air Resources Board has identified lead and vinyl chloride as "toxic air contaminants," with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

[9] National lead standard, rolling 3-month average: final rule signed October 15, 2008.

°C degrees Celsius
µg/m^3 = micrograms per cubic meter
mg/m^3 = milligrams per cubic meter
ppb = parts per billion
ppm = parts per million
$PM_{2.5}$ = particulate matter equal to or less than 2.5 micrometers in diameter
PM_{10} = particulate matter equal to or less than 10 micrometers in diameter
SO_2 = sulfur dioxide
U.S. EPA = U.S. Environmental Protection Agency

Ozone

Ozone, or smog, is not emitted directly into the environment, but is formed in the atmosphere by complex chemical reactions between reactive organic gases (ROG) and oxides of nitrogen (NO_X) in the presence of sunlight. Ozone formation is greatest on warm, windless, sunny days. The main sources of NO_X and ROG, often referred to as ozone precursors, are combustion processes (including motor vehicle engines); the evaporation of solvents, paints, and fuels; and biogenic sources. Automobiles are the single largest source of ozone precursors in the SFBAAB. Tailpipe emissions of ROG are highest during cold starts, hard acceleration, stop-and-go conditions, and slow speeds. They decline as speeds increase up to about 50 miles per hour, then increase again at high speeds and high engine loads. ROG emissions associated with evaporation of unburned fuel depend on vehicle and ambient temperature cycles. Nitrogen oxide emissions exhibit a different curve; emissions decrease as the vehicle approaches 30 miles per hour and then begin to increase with increasing speeds (BAAQMD, 2011).

Ozone levels usually build up during the day and peak in the afternoon hours. Short-term exposure can irritate the eyes and cause constriction of the airways. Besides causing shortness of breath, it can aggravate existing respiratory diseases such as asthma, bronchitis, and emphysema. Chronic exposure to high ozone levels can permanently damage lung tissue. Ozone can also damage plants and trees, and materials such as rubber and fabrics.

Table 3.6-1 shows that the most stringent applicable standards (state 1-hour standard of nine parts per hundred million and the federal 8-hour standard of 7.5 parts per hundred million) were not exceeded in San Francisco between 2006 and 2011 (CARB, 2012a).

Table 3.6-3 (on the next page) shows the current attainment status for each criteria air pollutant. For ozone, the SFBAAB is classified as a nonattainment area for the state and federal standards. This nonattainment classification is primarily due to ozone violations recorded in the East Bay portion of the SFBAAB.

Carbon Monoxide

Carbon monoxide (CO) is an odorless, colorless gas. It is formed by the incomplete combustion of fuels. The single largest source of CO in the SFBAAB is motor vehicles. Emissions are highest during cold starts, hard acceleration, stop-and-go driving, and when a vehicle is moving at low speeds. When inhaled at high concentrations, CO combines with hemoglobin in the blood and reduces the oxygen-carrying capacity of the blood. This results in reduced oxygen reaching the brain, heart, and other body tissues. This condition is especially critical for people with cardiovascular diseases, chronic lung disease, or anemia, and for fetuses. Even healthy people exposed to high CO concentrations can experience headaches, dizziness, fatigue, unconsciousness, and even death (BAAQMD, 2011).

No violations of the CO standard were recorded at the closest ambient air quality monitoring station (Table 3.6-1). The SFBAAB is classified as an attainment area for the state and federal CO standards.

Particulate Matter

Particulate matter (PM) refers to a wide range of solid or liquid particles in the atmosphere, including smoke, dust, aerosols, and metallic oxides. Respirable PM with an aerodynamic diameter of 10 micrometers or less is referred to as PM_{10}. $PM_{2.5}$ includes a subgroup of finer particles that have an aerodynamic diameter of 2.5 micrometers or less. Some PM, such as pollen, is naturally occurring. In the SFBAAB, most PM is caused by combustion, factories, construction, grading, demolition, agricultural activities, and motor vehicles. Extended exposure to PM can increase the risk of chronic respiratory disease. PM_{10} is of concern because it bypasses the body‘s natural filtration system more easily than larger particles, and can lodge deep in the lungs. The U.S. Environmental Protection Agency (U.S. EPA)

Table 3.6-3
Federal and State Attainment Status for the Bay Area

Pollutant	Averaging Time	California Attainment Status[1]	Federal Attainment Status[2,3]
Ozone	8 Hour	Nonattainment[9]	Nonattainment[4]
	1 Hour	Nonattainment	See footnote 5
Carbon Monoxide	8 Hour	Attainment	Attainment[6]
	1 Hour	Attainment	Attainment
Nitrogen Dioxide	1 Hour	Attainment	Unclassified
	Annual Arithmetic Mean	N/A	Attainment
Sulfur Dioxide[11]	24 Hour	Attainment	Attainment
	1 Hour	Attainment	Attainment
	Annual Arithmetic Mean	N/A	Attainment
Particulate Matter	Annual Arithmetic Mean	Nonattainment[7]	N/A
	24 Hour	Nonattainment	Unclassified
Particulate Matter – Fine	Annual Arithmetic Mean	Nonattainment[7]	Attainment
	24 Hour	N/A	Nonattainment[10]
Sulfates	24 Hour	Attainment	N/A
Lead[12]	30-day Average	N/A	Attainment
	Calendar Quarter	N/A	Attainment
	Rolling 3-Month Average[13]	N/A	See Footnote 13
Hydrogen Sulfide	1 Hour	Unclassified	N/A
Vinyl Chloride (chloroethene)[12]	24 Hour	No information available	N/A
Visibility-Reducing particles[8]	8 Hour (10:00 to 18:00 PST)	Unclassified	N/A

Table 3.6-3
Federal and State Attainment Status for the Bay Area (Continued)

Source: CARB, 2012a.

Notes:

[1] California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1-hour and 24-hour), nitrogen dioxide, suspended particulate matter – PM_{10}, and visibility-reducing particles are values that are not to be exceeded. The standards for sulfates, Lake Tahoe carbon monoxide, lead, hydrogen sulfide, and vinyl chloride are not to be equaled or exceeded. If the standard is for a 1-hour, 8-hour or 24-hour average (i.e., all standards except for lead and the PM_{10} annual standard), then some measurements may be excluded. In particular, measurements are excluded that CARB determines would occur less than once per year on the average.

[2] National standards shown are the "primary standards" designed to protect public health. National standards other than for ozone, particulates, and those based on annual averages are not to be exceeded more than once a year. The 1-hour ozone standard is attained if, during the most recent 3-year period, the average number of days per year with maximum hourly concentrations above the standard is equal to or less than one. The 8-hour ozone standard is attained when the 3-year average of the 4th highest daily concentrations is 0.075 ppm (75 ppb) or less. The 24-hour PM_{10} standard is attained when the 3-year average of the 99th percentile of monitored concentrations is less than 150 $\mu g/m^3$. The 24-hour $PM_{2.5}$ standard is attained when the 3-year average of 98th percentiles is less than 35 $\mu g/m^3$. Except for the national particulate standards, annual standards are met if the annual average falls below the standard at every site. The national annual particulate standard for PM_{10} is met if the 3-year average falls below the standard at every site. The annual $PM_{2.5}$ standard is met if the 3-year average of annual averages spatially averaged across officially designed clusters of sites falls below the standard.

[3] National air quality standards are set by U.S. EPA at levels determined to be protective of public health with an adequate margin of safety.

[4] In June 2004, the Bay Area was designated as a marginal nonattainment area of the national 8-hour ozone standard. The U.S. EPA lowered the national 8-hour ozone standard from 0.080 to 0.075 ppm (i.e., 75 ppb), effective May 27, 2008. In early January 2010, the U.S. EPA proposed a stricter air quality standard for ground level ozone. The new ozone proposal would set the primary smog standard at a level between 0.060 and 0.070 ppm measured over an 8-hour period.

[5] The national 1-hour ozone standard was revoked by U.S. EPA on June 15, 2005.

[6] In April 1998, the Bay Area was redesignated to attainment for the national 8-hour carbon monoxide standard.

[7] In June 2002, CARB established new annual standards for $PM_{2.5}$ and PM_{10}.

[8] Statewide VRP Standard (except Lake Tahoe Air Basin): Particles in sufficient amount to produce an extinction coefficient of 0.23 per kilometer when the relative humidity is less than 70 percent. This standard is intended to limit the frequency and severity of visibility impairment due to regional haze and is equivalent to a 10-mile nominal visual range.

[9] The 8-hour California ozone standard was approved by CARB on April 28, 2005, and became effective on May 17, 2006.

[10] The U.S. EPA lowered the 24-hour $PM_{2.5}$ standard from 65 $\mu g/m^3$ to 35 $\mu g/m^3$ in 2006. U.S. EPA designated the Bay Area as being in nonattainment of the $PM_{2.5}$ standard on October 8, 2009. The effective date of the designation is December 14, 2009, and the Air District has 3 years to develop an SIP demonstrating that the Bay Area will achieve the revised standard by December 14, 2014. The SIP for the new $PM_{2.5}$ standard must be submitted to the U.S. EPA by December 14, 2012.

[11] On June 2, 2010, the U.S. EPA established a new 1-hour SO_2 standard, effective August 23, 2010, which is based on the 3-year average of the annual 99th percentile of 1-hour daily maximum concentrations. The existing 0.030 ppm annual and 0.14 ppm 24-hour SO_2 NAAQS, however must continue to be used until 1 year following U.S. EPA initial designations of the new 1-hour SO_2 NAAQS. The U.S. EPA expects to designate areas by June 2012.

[12] CARB has identified lead and vinyl chloride as "toxic air contaminants," with no threshold level of exposure below which there are no adverse health effects determined.

[13] National lead standard, rolling 3-month average: final rule signed October 15, 2008.

CARB = California Air Resources Board
$\mu g/m^3$ = micrograms per cubic meter
NAAQS = National Ambient Air Quality Standards
$PM_{2.5}$ = particulate matter equal to or less than 2.5 micrometers in diameter
PM_{10} = particulate matter equal to or less than 10 micrometers in diameter
ppb = parts per billion
ppm = parts per million
PST = Pacific Standard Time
SIP = State Implementation Plan
SO_2 = sulfur dioxide
U.S. EPA = U.S. Environmental Protection Agency
VRP = visibility-reducing particle

and the State of California revised their PM standards several years ago to apply only to these fine particles. $PM_{2.5}$ poses an increased health risk because the particles can deposit deep in the lungs and contain substances that are particularly harmful to human health. Motor vehicles are currently responsible for about half of particulates in the SFBAAB. Wood burning in fireplaces and stoves is another large source of fine particulates (BAAQMD, 2011).

Table 3.6-1 shows that exceedances of the state PM_{10} standard have routinely occurred in San Francisco. The state 24-hour PM_{10} standard of 50 micrograms per cubic meter was exceeded on up to 70 days per year between 2006 and 2011 (CARB, 2012a). The state 24-hour $PM_{2.5}$ standard was exceeded on up to 54 days per year between 2006 and 2011 (CARB, 2012a).

As indicated in Table 3.6-3, the SFBAAB is classified as a nonattainment area for the state and federal PM_{10} and $PM_{2.5}$ standards.

Nitrogen Dioxide

Nitrogen dioxide (NO_2) is a reddish-brown gas that is a by-product of combustion processes. Automobiles and industrial operations are the main sources of NO_2. Aside from its contribution to ozone formation, NO_2 can increase the risk of acute and chronic respiratory disease and reduce visibility. NO_2 may be visible as a coloring component of a brown cloud on high pollution days, especially in conjunction with high ozone levels (BAAQMD, 2011).

Table 3.6-1 shows that the current standards for NO_2 are being met in the San Francisco area. In 2010, the U.S. EPA implemented a new 1-hour NO_2 standard presented in Table 3.6-2. The California Air Resources Board (CARB) is recommending that the SFBAAB be designated as an attainment area for the new NO_2 standard (BAAQMD, 2011).

Sulfur Dioxide

Sulfur dioxide (SO_2) is a colorless acid gas with a pungent odor. It has potential to damage materials, and it can have health effects at high concentrations. It is produced by the combustion of sulfur-containing fuels, such as oil, coal, and diesel. SO_2 can irritate lung tissue and increase the risk of acute and chronic respiratory disease (BAAQMD, 2011).

Table 3.6-3 shows that the state standard for SO_2 is being met at the San Francisco monitoring station.

Lead

Lead is a metal found naturally in the environment as well as in manufactured products. The major sources of lead emissions have historically been mobile and industrial sources. As a result of the phase-out of leaded gasoline, metal processing is currently the primary source of lead emissions. The highest levels of lead in air are generally found near lead smelters. Other stationary sources are waste incinerators, utilities, and lead-acid battery manufacturers.

Twenty years ago, mobile sources were the main contributor to ambient lead concentrations in the air. In the early 1970s, the U.S. EPA set national regulations to gradually reduce the lead content in gasoline. In 1975, unleaded gasoline was introduced for motor vehicles equipped with catalytic converters. The U.S. EPA banned the use of leaded gasoline in highway vehicles in December 1995. As a result of the U.S. EPA‘s regulatory efforts to remove lead from gasoline, emissions of lead from the transportation sector and levels of lead in the air decreased dramatically (BAAQMD, 2011).

Toxic Air Contaminants

In addition to the criteria air pollutants listed above, another group of pollutants, commonly referred to as TACs or hazardous air pollutants, can result in health effects that can be quite severe. Many TACs are confirmed or suspected carcinogens, or are known or suspected to cause birth defects or neurological damage. Secondly, many TACs can be toxic at very low concentrations. For some chemicals, such as carcinogens, there are no thresholds below which exposure can be considered risk-free.

Industrial facilities and mobile sources are significant sources of TACs. The electronics industry, including semiconductor manufacturing, has the potential to contaminate both air and water due to the highly toxic chlorinated solvents commonly used in semiconductor production processes. Sources of TACs go beyond industry. Various common urban facilities also produce TAC emissions, such as gasoline stations (benzene), hospitals (ethylene oxide), and dry cleaners (perchloroethylene). Automobile exhaust also contains TACs such as benzene and 1,3-butadiene. Most recently, diesel particulate matter (DPM) was identified as a TAC by CARB. DPM differs from other TACs in that it is not a single substance but rather a complex mixture of hundreds of substances. BAAQMD research indicates that mobile-source emissions of DPM, benzene, and 1,3-butadiene represent a substantial portion of the ambient background risk from TACs in the SFBAAB.

Ambient standards have not been developed for TACs. Instead, the BAAQMD uses a risk-based approach to regulate TACs. In addition to monitoring criteria pollutants, both the BAAQMD and CARB operate TAC monitoring networks in the SFBAAB. BAAQMD monitors TACs that are typically found in the highest concentrations in ambient air and therefore represent high risks to human health. The BAAQMD ambient TAC monitoring station nearest to the project area is the station at 16th and Arkansas streets in San Francisco (BAAQMD, 2011).

Sensitive Receptors

Sensitive receptors refer to those segments of the population most susceptible to poor air quality: children, the elderly, and those with pre-existing serious health problems affected by air quality. Examples of receptors include residences, schools and school yards, parks and play grounds, daycare centers, nursing homes, and medical facilities. Consistent with BAAQMD guidelines, the health risk assessment for the project considered the closest sensitive receptors (within 1,000 feet of the project construction area), as shown on Figure 3.6-1 (BAAQMD, 2011). For the purposes of this analysis, the closest residential receptor was considered the closest edge of a residentially zoned property. The closest such property is approximately 300 feet to the northwest of the project area, as shown on Figure 3.6-1; however, it should be noted that this portion of the residentially zoned property does not contain any residential structures, and the distance to the nearest residences is 700 feet from the project area. In addition, commercial areas with outdoor seating and open spaces used for recreation in the vicinity of the project area were considered in the health risk analysis; those areas are located immediately adjacent to the project construction zone.

Global Climate Change Setting

This section describes the causes and consequences of global climate change.

Causes of Climate Change

Global climate change is caused by anthropogenic emissions of greenhouse gases (GHGs) released into the atmosphere through combustion of fossil fuels, and other GHG-producing activities such as deforestation and land use change.

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LAND USES AND AIR QUALITY SENSITIVE RECEPTORS

Downtown San Francisco
Ferry Terminal Expansion Project
San Francisco, California

28067812

FIGURE 3.6-1

Source: Imagery, Digital Globe, 2009; Land Use, City of San Francisco, 2005; GNIS Database, USGS, 2010.

GHGs play a critical role in the Earth's radiation budget by trapping infrared radiation emitted from the Earth's surface, which could have otherwise escaped to space. The "greenhouse effect" keeps the Earth's atmosphere near the surface warmer than it would be otherwise, and allows for successful habitation by humans and other forms of life.

Prominent GHGs contributing to this process include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and fluorocarbons. Emissions of CO_2 and N_2O are byproducts of fossil fuel combustion, among other sources. CH_4, a highly potent GHG, results from off gassing associated with agricultural practices and landfills. Fluorocarbons are commonly used in refrigeration systems.

Global warming potential (GWP) is a measure of the estimated contribution to global warming of a given mass of GHG. It is a relative scale that compares the gas in question to that of the same mass of CO_2 (whose GWP is by definition 1). Using each pollutant's GWP, emissions of CO_2, CH_4, and N_2O can be converted into CO_2 equivalents (CO_2e) (U.S. EPA, 2012).

Effects of Climate Change

The combustion of fossil fuels releases carbon that has been stored underground into the active carbon cycle, thus increasing concentrations of GHGs in the atmosphere. Emissions of GHGs in excess of natural ambient concentrations are theorized to be responsible for the enhancement of the greenhouse effect and contribute to what is termed "global warming," a trend of unnatural warming of the Earth's natural climate. Increases in these gases lead to more absorption of radiation and warm the lower atmosphere further, thereby increasing evaporation rates and temperatures near the surface. Climate change is a global problem, and GHGs are global pollutants, unlike criteria pollutants (such as ozone, CO, and PM) and TACs, which are pollutants of regional and local concern.

Climate change could affect California's natural environment in the following ways (CEC, 2005):

- Rising sea levels along the California coastline, particularly in San Francisco and the Sacramento-San Joaquin River Delta, due to ocean expansion;
- Extreme heat conditions, such as heat waves and very high temperatures, which could last longer and become more frequent;
- An increase in heat-related human deaths and infectious diseases, and a higher risk of respiratory problems caused by deteriorating air quality;
- Reduced snow pack and stream flow in the Sierra Nevada mountains, affecting winter recreation and water supplies;
- Potential increase in the severity of winter storms, affecting peak stream flows and flooding;
- Changes in growing season conditions that could affect California agriculture, causing variations in crop quality and yield; and
- Changes in distribution of plant and wildlife species due to changes in temperature, competition of colonizing species, changes in hydrologic cycles, changes in sea levels, and other climate-related effects.

These changes in California's climate and ecosystems could occur at a time when California's population is expected to increase from approximately 37 million in 2010 to 51 million by the year 2050 (California Department of Finance, 2012).

Transportation generates 41 percent of California's GHG emissions, followed by the industrial sector (23 percent), electricity generation (20 percent), agriculture and forestry (8 percent), and other sources (8 percent). Sinks of CO_2 include uptake by vegetation and dissolution into the ocean. In 2004, California generated 524 million metric tons of GHG measured as CO_2e emissions (CARB, 2011).

Regulatory Setting

Federal

Federal Clean Air Act

At the federal level, the U.S. EPA has been charged with implementing national air quality programs. U.S. EPA's air quality mandates are drawn primarily from the Federal Clean Air Act (FCAA).

The FCAA required the U.S. EPA to establish primary and secondary National Ambient Air Quality Standards (NAAQS), which are shown in Table 3.6-2**.** The FCAA also required each state to prepare an air quality control plan, referred to as a State Implementation Plan (SIP)**.** The Federal Clean Air Act Amendments of 1990 added requirements for states with nonattainment areas to revise their SIPs to incorporate additional control measures to reduce air pollution**.** The SIP is periodically modified to reflect the latest emissions inventories, planning documents, and rules and regulations of the air basins, as reported by their jurisdictional agencies. U.S. EPA has responsibility to review all state SIPs for conformity with the mandates of the FCAA and to determine whether implementation will achieve air quality goals (BAAQMD, 2011).

Transportation Conformity. In nonattainment or maintenance areas, road and transit projects are subject to transportation conformity. Transportation conformity applies to a project's operational emissions, but does not apply to construction emissions. Projects subject to transportation conformity must demonstrate both regional and local conformity. A project would conform regionally if the project has been included in a conforming long-range and short-range transportation plan—the Regional Transportation Plan and the Regional Transportation Improvement Program (TIP). These plans are prepared by the local metropolitan planning organization; in the project area, this is the Metropolitan Transportation Commission (MTC). The MTC must show that emissions generated by the Regional Transportation Plan and TIP would not exceed the transportation-related air emissions that have been included in the applicable SIP. Transportation or transit projects that would cause emissions to exceed the levels allowed in the SIP cannot be included in the conforming plan, and cannot be built (Caltrans, 2012). The proposed project is included in both the Regional Transportation Plan and the Regional TIP, both of which have been found to be conforming by the Federal Highway Administration (FHWA) (FHWA, 2010).

Local conformity is evaluated by performing a microscale or "hot-spot" analysis for conformity if the project's air basin is in nonattainment for CO, $PM_{2.5}$, and/or PM_{10}. Emission reduction measures may be required to ensure that the project would not cause or contribute to new violations of an existing federal ambient air quality standard. FHWA and U.S. EPA released a national guidance memo on March 29, 2006, for performance of qualitative $PM_{2.5}$ and PM_{10} hot spot analyses (Caltrans, 2012).

Supreme Court Ruling on California Clean Air Act Waiver

On April 2, 2007, the U.S. Supreme Court ruled that CO_2 is an air pollutant as defined under the FCAA, and that the U.S. EPA has the authority to regulate emissions of GHGs. However, there are no federal regulations or policies regarding GHG emissions directly applicable to the proposed project. In June 2009, the U.S. EPA granted California a waiver under the FCAA, allowing the state to impose its own, stricter GHG regulations for vehicles beginning in 2009.

State Regulations

California Clean Air Act

CARB is the agency responsible for coordination and oversight of state and local air pollution control programs in California, and for implementing the California Clean Air Act (CCAA). The CCAA requires that all air districts in the state endeavor to achieve and maintain the California Ambient Air Quality Standards (CAAQS) by the earliest practical date. The act specifies that districts should focus particular attention on reducing the emissions from transportation and areawide emission sources, and provides districts with the authority to regulate indirect sources.

CARB is primarily responsible for developing and implementing air pollution control plans to achieve and maintain the NAAQS. CARB is primarily responsible for statewide pollution sources, and produces a major part of the SIP. Local air districts are still relied on to provide additional strategies for sources under their jurisdiction. CARB combines these data and submits the completed SIP to the U.S. EPA.

Other CARB duties include monitoring air quality (in conjunction with air monitoring networks maintained by air pollution control and air quality management districts), establishing CAAQS (which in many cases are more stringent than the NAAQS), determining and updating area designations and maps, and setting emissions standards for new mobile sources, consumer products, small utility engines, and off-road vehicles (BAAQMD, 2011).

Executive Order S-3-05

Executive Order S-3-05 sets forth a series of target dates by which statewide GHG emissions would be progressively reduced: by 2010, reduce emissions to 2000 levels; by 2020, reduce emission to 1990 levels; and by 2050, reduce GHG emissions to 80 percent below 1990 levels.

Assembly Bill 32 and the California Climate Change Scoping Plan

The California Global Warming Solutions Act of 2006 and Assembly Bill (AB) 32 establish a cap on statewide GHG emissions and set forth the regulatory framework to achieve the corresponding reduction in statewide emission levels. Under AB 32, GHG are defined as CO_2, CH_4, N_2O, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride.

Pursuant to AB 32, CARB adopted a Scoping Plan in 2008, outlining measures to meet the 2020 GHG reduction limits (CARB, 2008). To meet these goals, California must reduce its GHG emissions by 30 percent below projected 2020 business-as-usual emission levels, or about 15 percent from today's levels. The Scoping Plan estimates a reduction of 174 million metric tons of CO_2e from the transportation, energy, agriculture, forestry, and high GWP sections.

AB 32 also anticipates that local government actions will result in reduced GHG emissions. CARB has identified a GHG reduction target of 15 percent from 2008 levels for local governments themselves, and notes that successful implementation of the plan relies on local governments' land use planning and urban growth decisions, because those governments have primary authority to plan, zone, approve, and permit land development to accommodate population growth and the changing needs of their jurisdictions (CARB, 2008).

Executive Order S-1-07

Executive Order S-1-07 established a goal of reducing the carbon intensity of transportation fuels sold in California by 10 percent by 2020. CARB determined that a Low Carbon Fuel Standard could be adopted

as a discrete, early-action measure to meet the mandates in AB 32. CARB adopted the Low Carbon Fuel Standard on April 23, 2009.

Senate Bill 97

Senate Bill 97 acknowledges that climate change is an important environmental issue that requires analysis under CEQA. The bill directed the California Office of Planning and Research to prepare and develop guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions, and transmit those guidelines to the California Natural Resources Agency by July 1, 2009. The California Natural Resources Agency certified those CEQA guidelines on December 30, 2009, and they became effective March 18, 2010 (CNRA, 2009).

Section 15064.4 of the CEQA guidelines describes the steps needed to evaluate whether a project's GHG emissions are significant. If a project's GHG emissions are deemed significant, then mitigation measures must be implemented. Section 15126.4(c) of CEQA guidelines lists types of GHG mitigation measures. They may include:

1. Measures in an existing plan or mitigation program for the reduction of emissions that are required as part of the lead agency's decision;
2. Reductions in emissions resulting from a project through implementation of project features, project design, or other measures, such as those described in Appendix F (Energy Conservation);
3. Offsite measures, including offsets that are not otherwise required, to mitigate a project's emissions; and/or
4. Measures that sequester greenhouse gases.

Local Regulations

Bay Area Air Quality Management District Air Quality Regulations

The BAAQMD manages air quality conditions in the SFBAAB through a comprehensive program of planning, regulation, enforcement, technical innovation, and promotion of the understanding of air quality issues. The clean air strategy of the BAAQMD includes preparing plans for the attainment of ambient air quality standards, adopting and enforcing rules and regulations concerning sources of air pollution, and issuing permits for stationary sources of air pollution. The BAAQMD also inspects stationary sources of air pollution and responds to citizen complaints; monitors ambient air quality and meteorological conditions; and implements programs and regulations required by the FCAA, FCAA amendments, and the CCAA (BAAQMD, 2011).

As stated above, the BAAQMD prepares plans to attain ambient air quality standards in the SFBAAB. The BAAQMD prepares ozone attainment plans for the national ozone standard, and clean air plans for the California standard in coordination with both the MTC and the Association of Bay Area Governments.

2010 Clean Air Plan. The BAAQMD prepared the *2010 Clean Air Plan* to address nonattainment of the national 1-hour ozone standard in the SFBAAB. The purpose of the 2010 Clean Air Plan is to:

1. Update the Bay Area 2005 Ozone Strategy in accordance with the requirements of the CCAA to implement "all feasible measures" to reduce ozone;

2. Consider the impacts of ozone control measures on PM, air toxics, and GHGs in a single, integrated plan;

3. Review progress in improving air quality in recent years;

4. Establish emission control measures to be adopted or implemented in the period from 2009 to 2012.

Similarly, the BAAQMD prepared the 2010 Clean Air Plan to address nonattainment of the CAAQS. The SFBAAB is classified as a serious nonattainment area for ozone (Table 3.6-3). The "serious" classification triggers various plan submittal requirements and transportation performance standards. One such requirement is that BAAQMD update its Clean Air Plan every 3 years to reflect progress in meeting the air quality standards and to incorporate new information regarding the feasibility of control measures and new emission inventory data. The Bay Area's record of progress in implementing previous measures must also be reviewed. On September 15, 2010, BAAQMD adopted the most recent revision to the Clean Air Plan—the 2010 Clean Air Plan. The 2010 Clean Air Plan includes several measures designed to reduce emissions associated with transportation and transit projects. These include the following measures that could be applied to the proposed project:

- Mobile Source Measure A-3 – Green Fleets;
- Transportation Control Measure B-2 – Transit Efficiency and Use Strategies;
- Transportation Control Measure E-3 – Implement Transportation Pricing Reform; and
- Further Study Measure FSM-17 – Ferry System Expansion.

CEQA Guidelines. The BAAQMD has developed guidelines to assist lead agencies within its jurisdiction in implementing CEQA. The BAAQMD replaced its former guidelines (December 1999) by issuing the *CEQA Air Quality Guidelines*, including Air Quality CEQA Thresholds of Significance, in June 2010; and updated those new guidelines in May 2011 with new risk and hazard thresholds for sensitive receptors (BAAQMD, 2011). The guidelines include new thresholds of significance to assist lead agencies in determining when potential air quality impacts would be considered significant under CEQA. These guidelines include recommendations for analytical methodologies to determine air quality impacts and identify mitigation measures that can be used to avoid or reduce air quality impacts.

BAAQMD's guidelines include procedures for evaluating whether a project's construction and operational criteria pollutant emissions would result in a significant air quality impact, along with mitigation to reduce or eliminate any significant air impacts. BAAQMD's guidelines also include procedures for evaluating TAC impacts resulting from project construction and operation. These procedures consist of a step-by-step approach for determining whether a project's TAC emissions would result in significant acute, chronic, or carcinogenic health risks.

On March 5, 2012, the BAAQMD's Air Quality CEQA Thresholds of Significance were challenged by an order issued in *California Building Industry Association v. BAAQMD*, Alameda Superior Court Case No. RGI0548693. The order requires the BAAQMD thresholds to be subject to further environmental review. The claims made in the case concerned the CEQA impacts of adopting the thresholds (i.e., how the thresholds would affect land use development patterns); and petitioners argued that the thresholds for Health Risk Assessments encompassed issues not addressed by CEQA. However, as discussed in more detail below, in Section 3.6.3, Impact Evaluation, the BAAQMD's significance thresholds and recommended analysis methodologies were used in this analysis.

Bay Area Air Quality Management District Climate Change Regulations

BAAQMD has established a climate protection program to reduce pollutants that contribute to global climate change and affect air quality in the SFBAAB. The climate protection program includes measures that promote energy efficiency, reduce vehicle miles traveled, and develop alternative sources of energy, all of which reduce GHG emissions.

BAAQMD also seeks to support current climate protection programs in the region and to stimulate additional efforts through public education and outreach, technical assistance to local governments and other interested parties, and promotion of collaborative efforts among stakeholders.

In June 2010, the BAAQMD adopted GHG thresholds (BAAQMD, 2011). The BAAQMD recommends using any of the following three CEQA significance thresholds for individual projects: 1,100 metric tons CO_2e per year, 4.6 metric tons of CO_2e per number of residents plus employees, or compliance with a qualified climate action plan (CAP). If a project's operational GHG emissions are consistent with any one of these three significance thresholds, the project's operational GHG emissions would be considered less than significant. The BAAQMD has not adopted GHG significance thresholds for construction emissions (BAAQMD, 2011).

San Francisco General Plan Air Quality Element

The San Francisco General Plan includes the 1997 Air Quality Element. The objectives specified by the City and County of San Francisco (CCSF) include the following objectives that relate to the proposed project:

Objective 1: Adhere to state and federal air quality standards and regional programs.

Objective 2: Reduce mobile sources of air pollution through implementation of the Transportation Element of the General Plan

Objective 3: Decrease the air quality impacts of development by coordination of land use and transportation decisions.

Objective 4: Minimize particulate matter emissions from road and construction sites.

Objective 5: Link the positive effects of energy conservation and waste management to emission reductions.

San Francisco Transit First Policy

In 1973, CCSF instituted the Transit First Policy to the City Charter, with the goal of reducing San Francisco's reliance on freeways and meeting transportation needs by emphasizing mass transportation (CCSF, 2011c). The Transit First Policy gives priority to public transit investments, adopts street capacity and parking policies to discourage increased automobile traffic, and encourages the use of transit, bicycling, and walking instead of single-occupant vehicles.

San Francisco Planning Code

The San Francisco Planning Code includes smart growth policies such as electric vehicle refueling stations in city parking garages, bicycle storage facilities for commercial and office buildings, and zoning that is supportive of high-density mixed-use infill development. There is a communitywide focus on ensuring that San Francisco's neighborhoods are "livable," reflected in the San Francisco Better Streets Plan, which provide streetscape policies throughout the city; the Transit Effectiveness Project, which aims to improve transit service; and the San Francisco Bicycle Plan. All of these plans and projects are intended to promote alternative transportation policies for residents and visitors (CCSF, 2011b).

Regional Transportation Plan

In 2009, the MTC adopted the *Transportation 2035 Plan for the San Francisco Bay Area*, which specifies how anticipated federal, state, and local transportation funds will be spent in the nine-county Bay Area until 2035. The plan's vision is to support a prosperous and globally competitive Bay Area economy; provide for a healthy and safe environment; and promote equitable mobility opportunities for all residents. Among other initiatives, the plan launches a Transportation Climate Action Campaign to reduce transportation-related GHG emissions (MTC, 2012). Projects identified in the Transportation 2035 Plan only include proposed transportation projects that are consistent with (or conform to) the approved SIP, and hence the requirements of the FCAA. In 2010, an administrative modification to the plan was approved to make minor changes to project costs, initiation dates, or funding sources (MTC, 2010b).

The federally required TIP is a comprehensive listing of surface transportation capital projects for the nine-county San Francisco Bay Area that receive federal funds, are subject to a federally required action, or are regionally significant. The MTC prepares and adopts the TIP at least once every 4 years. Projects identified in the TIP only include proposed transportation projects that are consistent with (or conform to) the approved SIP, and hence the requirements of the FCAA.

The FHWA and the Federal Transit Administration approved the 2011 TIP and 2035 Transportation Plan on December 14, 2010 (FHWA, 2010).

Local GHG Reduction Strategy

The San Francisco Department of the Environment and the San Francisco Public Utilities Commission prepared the *Climate Action Plan for San Francisco Local Actions to Reduce Greenhouse Gas Emissions* (September 2004), which was designed to meet standards established by the BAAQMD. The CAP provides background climate change information; presents estimates of San Francisco's baseline GHG emissions inventory and reduction target; describes recommended emissions reduction actions in key target sectors; and presents next steps required during 2005-2007 to implement the CAP (CCSF, 2004). On October 28, 2010, BAAQMD wrote a letter to CCSF that approved the CAP as "qualified" (Roggenkamp, 2010). Consequently, projects found to be consistent with CCSF's qualified CAP do not need to take any further actions with regard to climate change or GHG emissions.

CCSF's Strategies to Address Greenhouse Gas Emissions (2010) presents CCSF's assessment of policies, programs, and ordinances that collectively represent San Francisco's qualified GHG reduction in compliance with the BAAQMD's *CEQA Air Quality Guidelines* and thresholds of significance. The Strategies to Address Greenhouse Gas Emissions (2010) identifies a number of actions that CCSF has taken in support of the San Francisco CAP (2004), and mandatory requirements and incentives that have measurably reduced GHG emissions. These include, but are not limited to, increases in the energy efficiency of new and existing buildings, installation of solar panels on building roofs, implementation of a green building strategy, adoption of a zero waste strategy, a construction and demolition debris recovery ordinance, a solar energy generation subsidy, incorporation of alternative fuel vehicles in CCSF's transportation fleet (including buses and taxis), and a mandatory composting ordinance. The strategy also identifies 42 specific regulations for new development that would reduce a project's GHG emissions.

Greenhouse Gas Reduction Ordinance

In 2008, CCSF amended the San Francisco Environment Code to establish GHG emission reduction targets and departmental action plans; and to authorize the San Francisco Department of the Environment to coordinate efforts to meet these targets, and to make environmental findings. The ordinance establishes the following GHG emission reduction limits for San Francisco and the target dates by which they must be achieved:

- Determine 1990 city GHG emissions, the baseline level with reference to which target reductions are set; and
- Reduce GHG emissions by 25 percent below 1990 levels by 2017, 40 percent below 1990 levels by 2025, and 80 percent below 1990 levels by 2050.

CCSF departments must prepare a CAP that assesses GHG emissions associated with their activities, and recommends emission reductions. The Port of San Francisco (Port) must develop a boiler maintenance and replacement program for all Port property, implement the city's zero waste programs and green purchasing requirements, and implement the Port of San Francisco Building Code to further reduce the Port's GHG emissions to 20 percent below 1990 levels by 2012 (CCSF, 2011c).

Port of San Francisco Climate Action Plan

The Port CAP for 2009 documents the Port's carbon footprint and identifies opportunities to reduce the impacts from activities at the Port that might contribute to climate change. The Port's property is a complex mix of piers, structures, and open land with more than 25 million square feet and more than 500 tenants. Both Port and tenant operations contribute to GHG emissions (CCSF, 2011c).

The Port is engaged in several GHG reduction and sustainability measures that contribute to meeting climate change goals, including zero waste programs, employee commuter benefit programs, green purchasing, and sustainability planning. Additionally, the Port has been participating in a regional effort to promote sustainable marine industrial development along the West Coast (CCSF, 2011c).

Regulation of Diesel Backup Generators

In 2002, CCSF passed the Diesel Backup Generator Ordinance, which requires, per Article 30 in the CCSF's Health Code, that owners and/or operators of diesel generators submit an application to the Department of Public Health, and obtain a certificate of registration. The registration program requires that new diesel backup generators be equipped with emission control technologies; limits the operation of diesel backup generators for nonemergency purposes; requires periodic maintenance and record keeping; and provides an enforcement mechanism for violations of the ordinance (CCSF, 2010b; CCSF, 2002).

3.6.3 Impact Evaluation

The analysis considered whether the project would:

- Conflict with or obstruct implementation of the applicable air quality plan;
- Conflict with U.S. EPA transportation conformity regulations under the FCAA;
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation;
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors);
- Expose sensitive receptors to substantial pollutant concentrations; or
- Create objectionable odors affecting a substantial number of people.

In addition, a project would have a GHG or global climate change impact if it:

- Generates GHG emissions, either directly or indirectly, that may have a significant impact on the environment; or
- Conflicts with an agency's applicable plan, policy, or regulation designed to reduce GHG emissions.

The project is located in a nonattainment area for $PM_{2.5}$ and must demonstrate transportation conformity by: a) showing that the project is listed in and consistent with the *Transportation 2035 Plan for the San Francisco Bay Area*; and b) performing a microscale or "hot-spot" analysis for conformity. The proposed project is also within a nonattainment area for federal $PM_{2.5}$ standards. Therefore, according to 40 Code of Federal Regulations (CFR) Part 93, a $PM_{2.5}$ hotspot analysis is required for conformity purposes. However, the U.S. EPA only requires hotspot analyses for projects that are listed in Section 93.123(b)(1) as a project of air quality concern. Five project categories qualify as projects of air quality concern:

(i). New or expanded highway projects that have a significant number of or significant increase in diesel vehicles;

(ii). Projects affecting intersections that are at Level of Service D, E, or F, with a significant number of diesel vehicles; or those that will change to Level of Service D, E, or F because of increased traffic volumes from a significant number of diesel vehicles related to the project;

(iii). New bus and rail terminals and transfer points that have a significant number of diesel vehicles congregating at a single location;

(iv). Expanded bus and rail terminals and transfer points that significantly increase the number of diesel vehicles congregating at a single location; and

(v). Projects in or affecting locations, areas, or categories of sites that are identified in the PM_{10} or $PM_{2.5}$ applicable implementation plan or implementation plan submission, as appropriate, as sites of violation or possible violation.

The BAAQMD's Air Quality CEQA Thresholds of Significance provide reference thresholds for considering whether a project would have an air quality impact, and recommend procedures for evaluating potential air quality impacts. The issues identified in the BAAQMD *CEQA Air Quality Guidelines* court case are not considered relevant to the scientific soundness of the BAAQMD's analysis of the level at which a pollutant would potentially significantly affect air quality or human health. Therefore, even though the guidelines have been suspended by the BAAQMD until the issues identified in the case are resolved, the analysis in this Environmental Impact Statement/Environmental Impact Report (EIS/EIR) was conducted in accordance with the thresholds and methods described in the BAAQMD *CEQA Air Quality Guidelines.*

It is the BAAQMD's policy that the adopted new risk and hazards thresholds apply to projects for which a Notice of Preparation is published, or environmental analysis begins, on or after the effective date of May 1, 2011 (BAAQMD, 2011). Even though the Notice of Preparation for this project was published in April 2011, a screening-level risk assessment, consistent with the new risk and hazards thresholds, was performed for the proposed project. The screening-level risk assessment was performed, using the U.S. EPA's Screen 3 model, to evaluate the potential risk to existing sensitive receptors in the vicinity of the proposed project's construction and operation areas. Further details regarding the methodology of this analysis are provided in Appendix B.

The BAAQMD has also adopted CEQA thresholds for GHGs. The BAAQMD considers a project's operations to be a less-than-significant GHG impact if it meets any one of these criteria:

- Complies with a qualified GHG Reduction Strategy;
- Has operational emissions of less than 1,100 metric tons CO_2e units per year; or
- Has emissions of less than 4.6 metric tons per service population per year (where service population refers to the total number of residents and employees for the project).

Because the project would be located within the geographic boundaries of the CCSF, and because CCSF has a BAAQMD-approved GHG Reduction Strategy, the project has been evaluated for compliance with the CAP (2004), and CCSF's Strategies to Address Greenhouse Gas Emissions (CCSF, 2010b). The proposed project has also been evaluated for consistency with the Port's CAP (Port, 2011b).

Direct and Indirect Impacts

As described in Section 3.1, the impacts associated with the Water Emergency Transportation Authority's (WETA's) planned expansion of water transit routes and services were analyzed in the Program EIR for the Implementation and Operations Plan (WETA, 2003a), and therefore are not assessed in this EIS/EIR. This EIS/EIR analyzes—at a project level—the site-specific impacts of improvements to the Downtown San

Francisco Ferry Terminal (Ferry Terminal), and impacts associated with the increase in vessels while they use and/or are docked at the Ferry Terminal. The Program EIR analyzed the air quality impacts associated with the regional and cumulative increase in water transit by comparing regional emissions of all sources (i.e., vehicles, buses, and water transit vessels) that would result from the proposed water transit system expansion with those that would result from the no project alternative (refer to Section 3.6 of the Program EIR). The Program EIR air quality analysis indicated that water transit system expansion project would result in a reduction in air emissions for most potential pollutants (NO_X, PM_{10}, $PM_{2.5}$, CO, and combined ozone precursors [ROG and NO_X]). The Program EIR concluded that the expansion of water transit service could result in a regional increase in ROG. Refer to the Program EIR for additional information.

The Program EIR also suggested that the proposed expansion of the water transit system could result in site-specific air quality impacts related to NO_2 and PM at the Ferry Terminal. This section provides an additional site-specific analysis of potential impacts at the Ferry Terminal.

Impact 3.6-1: Conflict with or Obstruct BAAQMD Air Quality Plan Implementation, Exceed Applicable Air Quality Standards, or Contribute Substantially to an Air Quality Violation

No Action Alternative

Although the No Action Alternative would not result in any facility improvements at the Ferry Terminal, increases in vessel traffic (and associated increases in vessel idling at Gates B and E) could occur under the No Action Alternative. As described in Section 2.2, a limited increase in vessel traffic would occur, which could be accommodated by the existing Gates B and E. Under the No Action Alternative, WETA vessel arrivals could increase from 14 (existing) to 20 vessel arrivals during the AM peak period; and from 37 vessel arrivals per weekday to a total of 65 vessel arrivals per weekday. As a result, the No Action Alternative would indirectly increase vessel-related exhaust emissions of criteria pollutants and precursors (ROG, NO_X, PM_{10}, and $PM_{2.5}$) compared to existing conditions. The No Action Alternative would not involve any direct operational activities, and would not generate any direct emissions. The BAAQMD *CEQA Air Quality Guidelines* established maximum annual emission thresholds (tons per year) and average daily emission thresholds (pounds per day [lbs/day]) for the criteria pollutants (ROG, NO_X, PM_{10}, and $PM_{2.5}$). The total indirect and direct emissions from the No Action Alternative were compared to these annual and daily thresholds. As shown in Tables 3.6-4 and 3.6-5 (on the following pages), the No Action Alternative's operational emissions would not exceed the applicable BAAQMD thresholds.

Action Alternative

The proposed project improvements would allow for vessel traffic to increase at the Ferry Terminal. The potential sources of exhaust emissions that could be generated from proposed project operation would include idling of the additional vessels that could be accommodated at the new gates; operation and periodic testing of an emergency generator; and the equipment used for maintenance dredging every 3 or 4 years. Based on the existing and new water transit services that would be operated by WETA for the proposed project, vessel traffic for WETA services is projected to increase, in comparison to the No Action Alternative, from 20 to 57 vessel arrivals per AM peak hour; and from 65 to 181 vessel arrivals per weekday.

For the purposes of this analysis, the following assumptions were made:

- Vessel arrivals are assumed to be evenly composed of small vessels (2,198 horsepower) and large vessels (7,657 horsepower). Vessel types assumed in this analysis were based on vessel information provided in the Program EIR's Technical Appendix Air-C, Emissions for Alternatives 1 through 4's *Summary of Marine Emissions for the No Project and "Reduced" Alternative 2 Project Scenarios Assuming U.S. EPA Tier 2 Emissions Standards for Diesel Engines* table (WETA, 2003a). As described in Section 2.3.6, Operating Elements, Vessel Characteristics, the vessels for WETA's services use U.S. EPA and CARB Tier 2–compliant clean diesel engines, which emit approximately

25 to 30 percent less ROG, NO_X, and PM_{10} than current diesel engines. In addition, add-on control devices such as selective catalytic reduction and particulate traps would further reduce NO_X and PM_{10} emissions to 10 percent and 5 percent, respectively, of U.S. EPA Tier 2 levels. Specific emission factors used in the vessel emission analysis are provided in Appendix B.

- Operation of one emergency generator (assumed 549 horsepower) was assumed to occur for up to a maximum of 124 hours annually (2 hours per month for periodic testing, and up to 100 hours of use).
- Maintenance dredging emissions were assumed to occur over a 10-day period.
- To be conservative, total emission calculations shown in Tables 3.6-4 and 3.6-5 assume that all operation-related activities of the proposed project would occur in the same year (which could be as early as 2018).

Table 3.6-4
Estimated Annual Total Operational Emissions

Alternative	Emissions (tons/year)			
	ROG	NO_X	PM_{10}	$PM_{2.5}$
Indirect Operational Emissions				
No Action (Idling Vessels)	1.15	0.12	0.0032	0.0032
Proposed Project (Idling Vessels)	3.2	0.32	0.009	0.009
Direct Operational Emissions				
No Action	N/A	N/A	N/A	N/A
Proposed Project: (Maintenance Dredging)	0.001	0.02	0.0009	0.0009
Proposed Project: (Emergency Generator Use)	0.01	0.12	0.003	0.003
Total Direct and Indirect Operational Emissions				
No Action	1.15	0.12	0.0032	0.0032
Proposed Project	3.22	0.46	0.01	0.01
Total Net Increase of Proposed Project	2.07	0.34	0.010	0.010
BAAQMD Annual Emission Thresholds	10	10	15	10

Notes:

All vessels are assumed to use ultra- low sulfur diesel fuel.

Net difference values may slightly vary due to rounding.

Detailed emission estimates are included in Appendix B.

The BAAQMD thresholds are from the BAAQMD's *CEQA Air Quality Guidelines* (2011).

BAAQMD = Bay Area Air Quality Management District
CEQA = California Environmental Quality Act
N/A – not applicable
NO_X = oxides of nitrogen
$PM_{2.5}$ = particulate matter equal to or less than 2.5 micrometers in diameter
PM_{10} = particulate matter equal to or less than 10 micrometers in diameter
ROG = reactive organic gases

Table 3.6-5
Estimated Average Daily Direct and Indirect Operational Emissions

Alternative	Emissions (pounds/day)			
	ROG	NO_X	PM_{10}	$PM_{2.5}$
No Action	6.3	0.63	0.018	0.018
Proposed Project	17.7	2.5	0.073	0.071
Net Increase of Proposed Project	11.3	1.87	0.055	0.053
BAAQMD Daily Emission Thresholds	54	54	82	54

Notes:

Emissions are averaged from the total emissions (tons/1 year of operation [365 days]) for each alternative.

Net difference values may slightly vary due to rounding.

Detailed emission estimates are included in Appendix B.

The BAAQMD thresholds are from the BAAQMD's *CEQA Air Quality Guidelines* (2011).

BAAQMD = Bay Area Air Quality Management District
CEQA = California Environmental Quality Act
NO_X = oxides of nitrogen
$PM_{2.5}$ = particulate matter equal to or less than 2.5 micrometers in diameter
PM_{10} = particulate matter equal to or less than 10 micrometers in diameter
ROG = reactive organic gases

Additional specific assumptions used to calculate the operational emissions from the Action Alternative are detailed in Appendix B.

As shown in Tables 3.6-4 and 3.6-5, the proposed project would directly and indirectly increase exhaust emissions of criteria pollutants and precursors (ROG, NO_X, PM_{10}, and $PM_{2.5}$), in comparison to the No Action Alternative. However, the proposed project's direct and indirect operational emissions would not exceed the applicable annual or daily BAAQMD thresholds.

In addition, as identified in Appendix 1 of the 2035 Transportation Plan (MTC, 2009), the proposed project is included in an approved transportation project (as project 22006). The project is not a new or expanded highway project that would have a significant number of or increase in the number of diesel vehicles (40 CFR Section 93.123[b][1][i]). The proposed project does not affect intersections operating at a Level of Service D, E, or F with a significant number of diesel vehicles related to the project (40 CFR Section 93.123[b][1][ii]). The project is not a new bus terminal, rail terminal, or transfer point having a significant number of diesel vehicles congregating at a single location (40 CFR Section 93.123[b][1][iii], [iv]). The project is not an expansion of an existing bus or rail terminal, but is an expanded transfer point (40 CFR Section 93.123[b][1][iv]). The project would be considered an expanded transfer point, and was analyzed to determine if it could be considered to have a significant number of diesel vehicles congregating at a single location. During the 2½-hour AM peak period, project diesel-powered water transit vessel arrivals would increase, in comparison to the No Action Alternative, from 20 to 57. However, as described in detail in Impact 3.6-2, air quality dispersion modeling was conducted to estimate how the increase in diesel vessels would affect local air quality. The results of that modeling, which are included in Table 3.6-6 (on the following page), show that the project's diesel vessels would result in less-than-significant health risks and less-than-significant local $PM_{2.5}$ concentrations. The proposed project would neither be in nor affect locations, areas, or categories of sites that are identified in the PM_{10} or $PM_{2.5}$ applicable implementation plan or implementation plan submission (as appropriate), as sites of violation or possible violation. Therefore, the proposed project would be consistent with (or conform to) the approved SIP, and hence the transportation conformity requirements of the FCAA.

Table 3.6-6
Summary of Health Risks on Sensitive Receptors from the Proposed Project's Operational Emissions

Sensitive Receptor Type	Operational Risks		
	Chronic Risk from DPM Emission	Carcinogenic Risk from DPM Emission (Expected Risk Per Million)	$PM_{2.5}$ Concentrations ($\mu g/m^3$)
Residential	0.0012	2.45	0.006
Schools (including day cares)	0.0010	2.68	0.005
Commercial	0.0013	2.12	0.006
Medical Facility	0.0002	0.37	0.001
BAAQMD Significance Threshold	**1**	**10 per million**	**0.3 $\mu g/m^3$**

Notes:

Detailed risk estimates and methodology are included in Appendix B.

Risks were estimated for the nearest sensitive receptors to the project area for the above-listed sensitive receptor categories.

The BAAQMD thresholds are from the BAAQMD's *CEQA Air Quality Guidelines* (2011).

BAAQMD = Bay Area Air Quality Management District
DPM = diesel particulate matter
$\mu g/m^3$ = micrograms per cubic meter
$PM_{2.5}$ = particulate matter equal to or less than 2.5 micrometers in diameter

National Environmental Policy Act (NEPA) Determination. The project would not conflict with or obstruct implementation of the BAAQMD air quality plan, exceed applicable air quality standards, or contribute substantially to an existing or projected air quality violation for ROG, NO_X, PM_{10}, and $PM_{2.5}$; therefore, project impacts would not be adverse.

CEQA Determination. The project's potential to conflict with or obstruct implementation of the BAAQMD air quality plan, exceed applicable air quality standards, or contribute substantially to an existing or projected air quality violation for ROG, NO_X, PM_{10}, and $PM_{2.5}$ would be less than significant.

Impact 3.6-2: Expose Sensitive Receptors to Substantial Pollutant Concentrations

No Action Alternative

As described above under Impact 3.6-1, the No Action Alternative's operational emissions would not exceed the applicable BAAQMD thresholds. The BAAQMD's daily operational emission thresholds for criteria pollutants were developed to indicate whether a project's emissions would have the potential to expose sensitive receptors to substantial pollutant concentrations. The project's operational emissions would be less than BAAQMD's thresholds, and consequently would not expose sensitive receptors to substantial pollutant concentrations. As described below for the Action Alternative, the results of a screening-level health risk assessment indicate that the proposed project's emissions would also be well below the health risk thresholds developed by the BAAQMD. The operational emissions for the No Action Alternative would be even less than those of the Action Alternative, and would also be below the

health risk thresholds developed by the BAAQMD. Therefore, the No Action Alternative would not expose sensitive receptors to substantial pollutant concentrations.

Action Alternative

As described above under Impact 3.6-1, the proposed project would increase exhaust emissions of criteria pollutants and precursors (ROG, NO_X, PM_{10}, and $PM_{2.5}$) in comparison to the No Action Alternative. However, the proposed project's operational emissions would not exceed the applicable BAAQMD thresholds (Tables 3.6-4 and 3.6-5).

BAAQMD's daily operational emission thresholds for criteria pollutants were developed to indicate whether a project's emissions would have the potential to expose sensitive receptors to substantial pollutant concentrations. The project's operational emissions would be less than BAAQMD's thresholds, and consequently would not expose sensitive receptors to substantial pollutant concentrations.

The primary TAC of concern from diesel-powered equipment is diesel particulate matter (DPM), which is considered to be carcinogenic and poses a chronic health risk. In addition, $PM_{2.5}$ is also considered a health risk. DPM emissions include all PM_{10} exhaust emissions generated by diesel vehicles. A screening analysis was performed, consistent with the BAAQMD's guidelines, to determine whether the project's operational emissions of DPM and $PM_{2.5}$ would exceed recommended screening thresholds. The screening-level analysis methods and thresholds are designed to be substantially conservative. If a project exceeds screening thresholds, then a more detailed analysis would be required. The screening-level risk analysis is described in more detail in Appendix B.

The screening-level risk analysis takes into consideration both the project's estimated emissions and the distance to the air quality sensitive receptors from construction and operations activities. The sensitive receptors nearest to the proposed project are shown on Figure 3.6-1. The nearest residential area is approximately 700 feet to the northwest. The nearest school is approximately 300 feet to the west. The nearest commercial uses are located adjacent to and/or within the area where construction and operation activities would occur. The nearest medical facility is approximately 4,000 feet from the project area.

Table 3.6-6 summarizes the screening-level risk analysis results, by sensitive receptor type. The operation of the proposed project would result in minor net DPM emissions (less than 0.1 lbs/day), as shown in Table 3.6-5. The screening-level risk analysis shows chronic or carcinogenic health risks to the nearest sensitive receptors would be substantially less than the BAAQMD's thresholds (Table 3.6-6).

In addition, the project's net increase in $PM_{2.5}$ at sensitive receptors would also be well below the BAAQMD's significance threshold.

NEPA Determination. The project's potential to expose sensitive receptors to substantial pollutant concentrations would not be adverse.

CEQA Determination. The project's potential to expose sensitive receptors to substantial pollutant concentrations would be less than significant.

Impact 3.6-3: Create Objectionable Odors During Operation

No Action Alternative

The No Action Alternative would result in an increase in exhaust emissions from the idling of diesel-powered vessels. This could create objectionable odors in the immediate vicinity of the vessels. Vessels associated with the No Action Alternative do not fall into any of the known categories of concern for objectionable odors identified by the BAAQMD. Consequently, there is no BAAQMD-recommended

screening distance that would be applicable for the project. In addition, the vessels would use ultra-low sulfur diesel (ULSD), as required in California. This would minimize odors that typically result from sulfur dioxide emissions. Therefore, this alternative would not generate adverse odors.

Action Alternative

The proposed project would result in an increase in exhaust emissions from the idling of diesel-powered vessels. In addition, operation of an emergency generator could contribute to localized exhaust emission–related odors. However, the vessels and the generator would use ULSD, as required in California, which would minimize odors that typically result from sulfur dioxide emissions. Therefore, the project would not generate adverse odors.

NEPA Determination. The project's potential to create odors during construction that would be objectionable and affect a substantial number of people would not be adverse.

CEQA Determination. The project's potential to create odors during operation that would be objectionable and affect a substantial number of people would be less than significant.

Construction Impacts

The No Action Alternative would not result in any physical changes to the Ferry Terminal, and no construction activities would be required. Therefore, there would be no construction impacts on air quality.

Impact 3.6-4: Construction-Related Emissions of ROG, NO_X, PM_{10}, and $PM_{2.5}$ that Could Exceed Applicable Air Quality Standards

Construction activities would generate short-term emissions of criteria pollutants and ozone precursors (ROG, NO_X, PM_{10}, and $PM_{2.5}$). Equipment exhaust emissions would be generated by off-road equipment; on-road worker vehicles and concrete trucks; and marine vessels. Construction activities would not generate fugitive dust emissions (PM_{10} or $PM_{2.5}$), because the construction activities would occur over water and would not involve any ground-disturbing activities.

Details of the quantities and types of construction equipment, on-road vehicles, and marine vessels required for each project activity (described in Chapter 2.0, Alternatives) are provided in Appendix B. The resulting criteria pollutant emissions from these equipment/vehicles/vessels are provided in Appendix B and summarized in Table 3.6-7 (on the following page). For the purposes of this analysis, the estimate of unmitigated project emissions assumes that construction activities in the North Basin and South Basin would overlap, resulting in a 24-month construction period. In addition, the estimate of unmitigated emissions assumes that each workday would result in 8 hours of active construction-related unmitigated emissions. Appendix B details additional assumptions used in this analysis.

As previously described, the BAAQMD's standards have been applied to the project. As shown in Table 3.6-7, the proposed project's unmitigated ROG, PM_{10}, and $PM_{2.5}$ construction-related emissions would not exceed the BAAQMD's average daily emission standards for construction activities (Table 3.6-7). However, as shown in Table 3.6-7, the project's unmitigated construction-related NO_X emissions could exceed the BAAQMD standards during the 2-year construction period.

Implementation of Mitigation Measures AQ-1 and AQ-2 would reduce the project's construction NO_X emissions by requiring project construction to be phased, and through implementation of a variety of best management practices. As shown in Table 3.6-7, implementation of these measures would reduce the project's construction emission of NO_X below the BAAQMD's thresholds.

Table 3.6-7
Construction-Related Estimated Emissions from the Proposed Project

	Emissions (pounds/day)			
	ROG	**NO_X**	**PM_{10}**	**$PM_{2.5}$**
Estimated Unmitigated Average Total Emissions for the Proposed Project[1]	8.1	98	3.8	3.8
Estimated Average Total Emissions after implementation of Mitigation Measure AQ-1: Construction Phasing	5.1	62	2.4	2.4
Estimated Average Total emissions after implementation of Mitigation Measure AQ-1 and Mitigation Measure AQ-2: Best Management Practices	5.1	50	1.3	1.3
BAAQMD Emissions Threshold	54	54	82	54

Notes:

Mitigated emissions shown above indicate the emissions reduction from implementation of Mitigation Measure AQ-1, and an additional reduction from implementation of Mitigation Measure AQ-2. Mitigation measures are detailed in Section 3.6.4, Mitigation Measures.

The BAAQMD thresholds are from the BAAQMD's *CEQA Air Quality Guidelines* (2011).

[1] Unmitigated average total construction-related emissions from the proposed project were calculated by dividing the total combined North Basin and South Basin 2014 and 2015 estimated emissions (tons per year) by a 24-month, 30-day per month construction period, and applying a conversion factor to obtain an average daily emission in pounds per day. These unmitigated total emissions were assumed to: 1) occur during an overlapping 24-month construction period; and 2) be emitted daily from 8 hours of active construction activities.

BAAQMD = Bay Area Air Quality Management District
CEQA = California Environmental Quality Act
NO_X = oxides of nitrogen
$PM_{2.5}$ = particulate matter equal to or less than 2.5 micrometers in diameter
PM_{10} = particulate matter equal to or less than 10 micrometers in diameter
ROG = reactive organic gases

NEPA Determination. During construction, the project would not exceed applicable air quality standards or contribute substantially to an existing or projected air quality violation for ROG, PM_{10}, and $PM_{2.5}$. Although project construction emissions of NO_X have the potential to be adverse, implementation of Mitigation Measures AQ-1 and AQ-2 would reduce project emissions; therefore, emissions would not be adverse.

CEQA Determination. The project's potential to exceed applicable air quality standards or contribute substantially to an existing or projected air quality violation during construction would be less than significant for ROG, PM_{10}, and $PM_{2.5}$; and less than significant for NO_X with Mitigation Measures AQ-1 and AQ-2.

Impact 3.6-5: Expose Sensitive Receptors to Substantial Construction-Related Pollutant Concentrations

TACs described for Impact 3.6-4, the exhaust emissions from construction activities, could expose sensitive receptors to an increase in pollutant concentrations. BAAQMD's daily construction emission thresholds for criteria pollutants were developed to demonstrate whether a project's emissions have the potential to expose sensitive receptors to substantial pollutant concentrations.

In addition to the criteria pollutants, construction activities could expose sensitive receptors to TACs. The primary TACs of concern for the project would be DPM and $PM_{2.5}$ generated by diesel-powered construction equipment. A screening analysis was performed, consistent with the BAAQMD's guidelines, to determine whether the project's construction emissions of DPM and $PM_{2.5}$ would exceed recommended screening thresholds. The screening-level risk analysis analyzed the chronic, carcinogenic, and $PM_{2.5}$ risks at nearby sensitive receptors from the project's construction emissions, as shown in Table 3.6-8.

Construction-related chronic and carcinogenic risks of the project's DPM emissions would not exceed the BAAQMD's thresholds, as shown in Table 3.6-8. Furthermore, the potential chronic and carcinogenic risks shown in Table 3.6-7 would be even lower with implementation of Mitigation Measures AQ-1 and AQ-2, which would further reduce average daily DPM (i.e., PM_{10}) emissions to 1.3 lbs/day.

Table 3.6-8
Summary of Health Risks on Sensitive Receptors from the Proposed Project's Construction Emissions

Sensitive Receptor Type	Construction Risks			
	Chronic Risk from DPM Emission	Carcinogenic Risk from DPM Emission (Expected Risk Per Million)	Unmitigated $PM_{2.5}$ Concentrations ($\mu g/m^3$)	Mitigated $PM_{2.5}$ ($\mu g/m^3$)
Residential	0.08	4.77	0.403	0.140
Schools (including day cares)	0.07	4.12	0.348	0.121
Commercial	0.09	5.21	0.440	0.153
Medical Facility	0.012	0.71	0.060	0.021
BAAQMD Significance Threshold	**1**	**10 per million**	**0.3 $\mu g/m^3$**	**0.3 $\mu g/m^3$**

Notes:

Detailed risk estimates and methodology are included in Appendix B.

Risks were estimated for the nearest sensitive receptors to the project area for the above-listed sensitive receptor categories.

The BAAQMD thresholds are from the BAAQMD's *CEQA Air Quality Guidelines* (2011).

Mitigated emissions assume implementation of Mitigation Measures AQ-1 and AQ-2. With implementation of Mitigation Measure AQ-1, mitigated emissions assume no overlap of the two construction periods (38 months of construction under mitigated conditions versus 24 months for the unmitigated scenario). Mitigated emissions also assume a 45 percent reduction in $PM_{2.5}$ below the fleetwide average for offroad and marine emissions. This 45 percent reduction can be achieved using one or more of the options described in Mitigation Measure AQ-2 (e.g., use of late-model engines, or installation of DPM filters, retrofitting engines).

BAAQMD = Bay Area Air Quality Management District
DPM = diesel particulate matter
$\mu g/m^3$ = micrograms per cubic meter
$PM_{2.5}$ = particulate matter equal to or less than 2.5 micrometers in diameter

As indicated in Table 3.6-8, the project's construction emissions could result in $PM_{2.5}$ concentrations that exceed BAAQMD's significance thresholds. However, with implementation of Mitigation Measures AQ-1 and AQ-2, the $PM_{2.5}$ concentrations would be reduced, and would be less than BAAQMD's significance threshold.

NEPA Determination. The project's potential to expose sensitive receptors to substantial pollutant concentrations from construction would not be adverse for DPM. $PM_{2.5}$ emissions have the potential to

be adverse; however, with implementation of Mitigation Measures AQ-1 and AQ-2, emissions would be reduced and therefore would not be adverse.

CEQA Determination. The project's potential to expose sensitive receptors to substantial pollutant concentrations from construction would be less than significant for DPM, and less than significant for $PM_{2.5}$ with Mitigation Measures AQ-1 and AQ-2.

Impact 3.6-6: Create Objectionable Odors During Construction

The proposed project would require the use of marine vessels and various types of construction equipment (as described in Chapter 2.0, Alternatives), which would produce exhaust emissions and create potentially objectionable odors in the immediate vicinity of the construction site. However, all diesel-fueled equipment and vessels would use ULSD, which would minimize any adverse odors. In addition, the predominant wind direction in the project area is from the west, which blows emissions away from sensitive receptors.

NEPA Determination. The project's potential to create odors during construction that would be objectionable and affect a substantial number of people would not be adverse.

CEQA Determination. The project's potential to create odors during construction that would be objectionable and affect a substantial number of people would be less than significant.

Cumulative Impacts

Impact 3.6-7: Result in a Cumulatively Considerable Net Increase of Any Criteria Pollutant for which the Project Region is in Nonattainment

As described in Impacts 3.6-1 and 3.6-4 above, the project would result in increases in some air emissions; however, these emissions of ROG, NO_X, PM_{10}, and $PM_{2.5}$ would not exceed BAAQMD thresholds with implementation of Mitigation Measures AQ-1 and AQ-2. The BAAQMD has developed its thresholds so that individual projects would not create a cumulative air quality issue. Therefore, if a project's emissions are below the BAAQMD's thresholds, the project's individual emissions would not be considered cumulatively considerable (BAAQMD, 2011). Because the project's emissions would not exceed the BAAQMD thresholds, the project's incremental increase in emissions would not result in substantial cumulatively adverse impacts on SFBAAB air quality.

In addition, the proposed project would facilitate implementation of WETA's Implementation and Operations Plan (IOP) for expanded water transit service in the Bay Area. The WETA IOP Program EIR analyzed increased regional water transit service, and found that an expanded water transit system would result in a net decrease in NO_X, CO, and PM_{10} (WETA, 2003b).

NEPA Determination. The project would not contribute to cumulative adverse impacts from increases in any criteria pollutant for which the project region is in nonattainment under an applicable federal or state ambient air quality standard.

CEQA Determination. The project's contribution to cumulative impacts from increases in any criteria pollutant for which the project region is in nonattainment under an applicable federal or state ambient air quality standard would be less than significant.

Impact 3.6-8: Expose Sensitive Receptors to Cumulatively Considerable Substantial Pollutant Concentrations

As described in Impacts 3.6-2 and 3.6-5, the project would result in increases in some air emissions; however, the project would not expose sensitive receptors to substantial concentrations of criteria

pollutants because, with the implementation of Mitigation Measures AQ-1 and AQ-2, the project's construction and operational emissions would not exceed BAAQMD's thresholds. Also, the project is included within the applicable regional transportation plans, and consequently its emissions of ROG, NO_X, PM_{10}, and $PM_{2.5}$ (pollutants for which the SFBAAB does not meet federal ambient air quality standards) would not contribute to a cumulative adverse impact. In addition, the project would not cause localized PM_{10} or $PM_{2.5}$ hot spot impacts because it is not considered to be a project of air quality concern.

The project also has the potential to expose sensitive receptors to cumulatively substantial concentrations of TACs. The primary TACs of concern from the project are DPM and $PM_{2.5}$. Diesel-powered equipment would generate DPM and $PM_{2.5}$ during project construction and operation, although the amounts generated would be relatively low. A cumulative health risk assessment was conducted using BAAQMD-recommended procedures. Those procedures require that the project's maximum cancer risk, chronic hazard value, and $PM_{2.5}$ concentrations be added to the maximum values for other emission sources located within 1,000 feet of the project. Table 3.6-9 shows the cumulative health risks. The project would not pose a cumulative cancer risk because the project's cancer risk, when added to the risk for other nearby emission sources, would be less than BAAQMD's cumulative threshold. Similarly, the total chronic hazard indices for the project plus other nearby sources would be less than BAAQMD's cumulative chronic significance threshold. Finally, the project's maximum $PM_{2.5}$ concentration, when added to the maximum concentrations from other nearby sources, would be less than BAAQMD's cumulative $PM_{2.5}$ significance threshold. Consequently, the project would not cause or contribute to a significant cumulative health risk.

Table 3.6-9
Cumulative Health Risks

Cumulative Health Risks	Cancer Risk	Chronic Hazard	Maximum Annual $PM_{2.5}$ Concentration ($\mu g/m^3$)
Proposed Project	2.68	0.0013	0.006
AMB Property	9.29	0.00328	0.00214
Paramount One	0.09	0.001	0.176
Hotel Vitale	2.79	0.01067	0.00289
Davis Cleaners	7.49	0	0
Equity Office/Ferry Building	68.9	0.024	0.122
Total Cumulative Impact	91.24	0.040	0.309
Significant Threshold	100 per million	10	0.8 $\mu g/m^3$
Total Cumulative Impact Exceed Significance Threshold?	No	No	No

Sources: BAAQMD, 2011; BAAQMD, 2012b.
$\mu g/m_3$ = micrograms per cubic meter
$PM_{2.5}$ = particulate matter equal to or less than 2.5 micrometers in diameter

NEPA Determination. The project would not contribute to cumulative adverse impacts that result from the exposure of sensitive receptors to substantial pollutant concentrations.

CEQA Determination. The project's contribution to cumulative impacts that result from the exposure of sensitive receptors to substantial pollutant concentrations would be less than significant.

Impact 3.6-9: Create Cumulatively Considerable Objectionable Odors Affecting a Substantial Number of People

Exhaust emissions from construction and operation of the project could create potentially objectionable odors in the immediate vicinity of the project site. However, as described in Impacts 3.6-3 and 3.6-6, the project would not result in substantially adverse odor impacts. The proposed project and the other past, present, and future reasonably foreseeable projects in the project area would all use ULSD for construction and operation, as required by California law, substantially reducing the potential for objectionable odors to be of cumulative concern. There would be no cumulatively adverse impact.

NEPA Determination. The project would not contribute to cumulatively adverse objectionable odors that affect a substantial number of people.

CEQA Determination. The project's potential to combine with other projects to create cumulatively objectionable odors affecting a substantial number of people would be less than significant.

Impact 3.6-10: Comply with the BAAQMD GHG Thresholds and Applicable Climate Action Plans

Project construction would result in temporary increases in GHG emissions related to truck and worker trips, and from the operation of construction equipment and marine vessels (quantified in Appendix B).

In addition, operation of the project accommodates an increase in water transit vessel traffic idling at the Ferry Terminal, which would result in GHG emissions; periodic GHG emissions from marine vessels performing maintenance dredging; and periodic GHG emissions from monthly testing and operation of the project's emergency generator (quantified in Appendix B).

The total GHG emissions from the project's construction activities were estimated to be approximately 14,888 lbs/day (approximately 6.8 metric tons per year) during an overlapping 24-month construction period. These emissions were reduced to approximately 9,403 lbs/day (approximately 4.3 metric tons per year) when the construction period was extended to 38 months, as required by implementation of Mitigation Measure AQ-1. There are no applicable quantitative construction-related GHG thresholds. However, as discussed further below, the project would comply with a qualified GHG Reduction Strategy.

The operation-related GHG emissions from the project would be approximately 640 metric tons per year, or 418 metric tons per year in net emissions. This is consistent with the BAAQMD's operational emissions threshold of less than 1,100 metric tons CO_2e units per year. In addition, the project would comply with a qualified GHG Reduction Strategy, as discussed further below.

The project would be consistent with the long-term and short-term actions listed in San Francisco's CAP, presented in Table 3.6-10 (on the following page). The project would facilitate implementation of WETA's IOP, which would expand and improve regional transit service and connections, short- and long-term goals of San Francisco's CAP, listed in Table 3.6-10. As demonstrated in the Program EIR for the IOP, implementation of WETA's IOP would also result in a reduction in overall vehicle miles traveled in the region (WETA, 2003a).

As described in Section 2.3.5, Design Considerations, Green Building, the proposed project would include sustainable construction materials and methods, where possible, and would be designed in response to state, regional, and local standards for stormwater management and water quality, including the San Francisco Green Building Ordinance. Implementation of these green building approaches would ensure that the project is consistent with the applicable CAPs and green building ordinances.

Table 3.6-10
Summary of Applicable GHG-Reduction Policies from the San Francisco Climate Action Plan

Long-Term Actions

Transportation Actions

- Increase the Use of Public Transit as an Alternative to Driving
  - Expand and Improve Regional Service and Connections

Energy-Efficiency Actions

- Strengthen Legislation, Codes, and Standards
  - Support and Enforce Green Building Ordinance

Renewable Energy Actions

- Develop Renewable Energy Projects
  - Implement Generation Solar
  - Expand Solar Photovoltaic Installations on Municipal Buildings

Solid Waste Actions

- Expand Construction and Demolition Debris Recycling

Short-Term Actions

Transportation Actions

- Public Transit
  - Expand local transit service
  - Expand and improve regional service and interconnections

Energy-Efficiency Actions

- Incentives, Direct Installation, and Technical Assistance
  - Design and implement comprehensive departmental energy efficiency programs at Muni, the Port of San Francisco, the San Francisco International Airport, the San Francisco Public Utilities Commission, and other departments
- Legislation, Codes, and Standards
  - Enforce the Green Building Ordinance requiring energy-efficient equipment, building commissioning, and Leadership in Energy and Environmental Design green building certification in municipal facilities

Solid Waste Actions

- Construction and Demolition Debris Recycling
  - Complete Norcal Waste Systems, Inc.'s new Materials Recovery Facility and monitor operations to expand capacity for construction and demolition diversion.
  - Expand outreach, including promoting participation in waste diversion programs by building owners/managers and contractors.

Source: SF Environment and SFPUC, 2004.

The project would be also consistent with the CAP's renewable energy provisions, because it is planned as a zero net energy project, which would be achieved through the use of photovoltaic cells incorporated into the canopies at Gates A, B, E, F, and G. The use of solar energy as part of the proposed project is consistent with CCSF's and the Port's CAPs, which require all tenants to develop onsite renewable energy.

Because the proposed project is consistent with and supports the implementation of CCSF's and the Port's CAPs, the project would not result in substantial long-term cumulatively adverse effects related to global climate change.

NEPA Determination. As shown in Table 3.6-10 and as discussed above, the project is consistent with the applicable long-term and short-term actions included in CCSF's and the Port's CAPs. Therefore, the project would not contribute to cumulative adverse GHG emissions impacts.

CEQA Determination. As shown in Table 3.6-10 and as discussed above, the project is consistent with the applicable long-term and short-term actions included in CCSF's and the Port's CAPs. Therefore, the project would have a less-than-significant cumulative impact on GHG emissions.

3.6.4 Mitigation Measures

Mitigation Measure AQ-1: Construction Phasing

WETA will phase construction activities in such a way that onsite emission-generating construction activities for the North Basin and South Basin improvements do not overlap.

Mitigation Measure AQ-2: Implement BAAQMD-Recommended Best Management Practices

The following BAAQMD-recommended best management practices will be implemented to reduce exhaust emissions:

- Minimize the idling time of diesel-powered construction equipment to 2 minutes.
- The contractor will demonstrate at various phases of construction (e.g., 25 percent, 50 percent, and completion) that the off-road equipment (more than 50 horsepower) and marine vessels to be used during construction (i.e., owned, leased, and subcontractor vehicles) would achieve a project-wide fleet-average 20 percent NO_X reduction, and a 45 percent PM reduction compared to the most recent CARB fleet average, to the extent feasible. Acceptable options for reducing emissions include the use of late-model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, add-on devices such as particulate filters, and/or other options that may become available. The contractor will document efforts taken to achieve the specified goals, explain why meeting the goals was not feasible (if applicable), and indicate what emissions reduction and equipment use goals were achieved.
- Require that all construction equipment, diesel trucks, and generators be equipped with Best Available Control Technology for emission reductions of NO_X and PM.
- Require that all contractors use equipment that meets CARB's most recent certification standard for off-road heavy duty diesel engines.

3.7 NOISE AND VIBRATION

3.7.1 Introduction to the Analysis

This section assesses potential noise and vibration impacts associated with construction activities and water transit operations for the proposed project. The project's construction activities could result in noise impacts and potential vibration impacts to nearby historic structures in the study area. However, with the implementation of mitigation measures presented in Section 3.7.4, these impacts would be minimized and reduced to not adverse and less than significant.

3.7.2 Affected Environment

This section describes the existing noise environment within the proposed project study area, as well as the applicable regulatory setting for evaluating noise and vibration associated with the construction and operation of the project. Underwater noise and its potential to affect marine life is considered and discussed in Section 3.9, Biological Resources.

Background

Noise Fundamentals

Noise is generally defined as loud, unpleasant, unexpected, or undesired sound that is typically associated with human activity, and that interferes with or disrupts normal activities. Although prolonged exposure to high noise levels has been demonstrated to cause hearing loss, the principal human response to environmental noise is annoyance. The response of individuals to similar noise events is diverse and influenced by the type of noise; the perceived importance of the noise and its appropriateness in the setting; the time of day and the type of activity during which the noise occurs; and the sensitivity of the individual.

Sound consists of vibrations that travel through a medium, such as air, and are sensed by the human ear. Sound is generally characterized by several variables, including frequency and amplitude. Frequency describes the pitch of the sound and is measured in Hertz (Hz), while amplitude describes the sound's loudness and is measured in decibels (dB). Decibels are measured using a logarithmic scale. A sound level of 0 dB is approximately the lower threshold of human hearing and is barely audible under extremely quiet listening conditions. Normal conversational speech has a sound level of approximately 60 dB. Sound levels above approximately 110 dB begin to be felt inside the human ear as discomfort and eventually pain at 120 dB and higher levels. The minimum change in the sound level of individual events that an average person can detect is about 2 to 3 dB. A 4- to 5-dB change is readily perceived.

Sound pressure level, expressed in dB, is calculated by reference to a known standard reference level. Sound pressure level related to a specific sound source depends not only on the acoustical power of the source, but also on the distance from the source to the receiver and on the acoustical characteristics of the space surrounding the source.

Hertz is a measure of how many times each second the crest of a sound pressure wave passes a fixed point. For example, when a drummer beats a drum, the skin of the drum vibrates a number of times per second. When the drum skin vibrates 100 times per second it generates a sound pressure wave that is oscillating at 100 Hz, and this pressure oscillation is perceived by the ear/brain as a tonal pitch of 100 Hz. Sound frequencies between 20 and 20,000 Hz are within the range of sensitivity of the human ear.

Sounds one hears in the environment consist of a broad band of frequencies differing in sound level. The method commonly used to quantify environmental sounds consists of a weighting system that reflects that human hearing is less sensitive at low frequencies and extremely high frequencies than at the mid-range frequencies. This is called "A-weighting," and the decibel level measured is called the A-weighted sound

pressure level. Therefore, the units used are A-weighted decibels (dBA). Although sound pressure level value may adequately indicate the level of environmental noise at any instant in time, community noise levels vary continuously. Most environmental noise includes a mixture of noise from distant sources that creates a relatively steady background noise in which no particular source is identifiable. A single descriptor called the equivalent sound level (L_{eq}) may be used to describe sound that is changing in level. L_{eq} is the equivalent energy-mean sound pressure level in dBA during a specific time interval. It is the "equivalent" constant sound level that would have to be produced by a given source to equal the acoustic energy contained in the fluctuating sound level measured. In addition to the L_{eq}, it is often desirable to know the acoustic range of the noise source being measured. The maximum L_{eq} (L_{max}) and minimum L_{eq} (L_{min}) indicators represent the root-mean-square (RMS) maximum and minimum noise levels measured during the monitoring interval.

To describe the time-varying character of environmental noise, the statistical noise descriptors L_{10}, L_{50}, and L_{90} are commonly used. They are the noise levels exceeded 10 percent, 50 percent, and 90 percent of the measured time interval, respectively. Sound levels associated with the L_{10} typically describe transient or short-term events; half of the sounds during the measurement interval are softer than L_{50} and half are louder; while levels associated with L_{90} often describe background noise conditions and/or continuous, steady-state sound sources.

Finally, another sound measure known as the day-night average noise level (L_{dn}) is defined as the A-weighted average sound level for a 24-hour day, with a 10-dB adjustment added to nighttime sound levels (10:00 PM to 7:00 AM) to compensate for increased sensitivity to noise during usually quieter evening and nighttime hours. The community noise equivalent level (CNEL) is also defined as the A-weighted average sound level for a 24-hour day. It is calculated by adding a 5-dB adjustment to sound levels in the evening (7:00 PM to 10:00 PM) and a 10-dB adjustment to sound levels at night (10:00 PM to 7:00 AM) to compensate for increased sensitivity during such time periods when a quiet environment is expected. The CNEL is used by various agencies to define acceptable land use compatibility with respect to vehicular traffic noise. The L_{eq} during the daytime hours (7:00 AM to 10:00 PM) is described as L_{day} in this analysis.

Sound levels of typical noise sources and environments are provided in Table 3.7-1 to provide a frame of reference.

Table 3.7-1
Sound Pressure Levels of Typical Noise Sources and Noise Environments

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
Jet Fly-over at 1,000 feet	110-100	Rock Band
Gas Lawn Mower at 3 feet	100-90	
Diesel Truck at 50 feet, at 50 mph	90-80	Food Blender at 3 feet
Commercial Area, Gas Lawn Mower at 100 feet	70	Vacuum Cleaner at 10 feet
Heavy Traffic at 300 feet	60	Normal Speech at 3 feet
Quiet Urban Daytime	50-40	Large Business Office
Quiet Urban/Suburban Nighttime	40-30	Theater, Large Conference Room (Background)
Quiet Rural Nighttime	30-20	Library, Bedroom at Night
	20-10	Broadcast/Recording Studio
Lowest Threshold of Human Hearing	0	

Source: Caltrans, 2009b.
Notes:
dBA = A-weighted decibel
mph = miles per hour

Vibration Fundamentals

Groundborne vibration propagates from the source through the ground to adjacent buildings by surface waves. Vibration may be composed of a single pulse, a series of pulses, or a continuous oscillatory motion. The frequency of a vibrating object describes how rapidly it is oscillating, measured in Hz. Most environmental vibrations consist of a composite, or "spectrum" of many frequencies. The normal frequency range of most groundborne vibrations that can be felt generally starts from a low frequency of less than 1 Hz to a high of about 200 Hz. Vibration information for this analysis has been described in terms of the peak particle velocity (PPV), measured in inches per second, or vibration level measured with respect to RMS vibration velocity in decibels (VdB), with a reference quantity of 1 micro inch per second.

Vibration energy dissipates as it travels through the ground, causing the vibration amplitude to decrease with distance away from the source. High-frequency vibrations reduce much more rapidly than do low frequencies, so that in the far-field zone distant from a source, the low frequencies tend to dominate. Soil properties also affect the propagation of vibration. When groundborne vibration interacts with a building, there is usually a ground-to-foundation coupling loss; but the vibration also can be amplified by the structural resonances of the walls and floors. Vibration in buildings is typically perceived as rattling of windows, shaking of loose items, or the motion of building surfaces. In some cases, the vibration of building surfaces also can be radiated as sound and heard as a low-frequency rumbling noise, known as groundborne noise.

Groundborne vibration is generally limited to areas within a few hundred feet of certain types of industrial operations and construction/demolition activities such as pile driving. Road vehicles rarely create enough groundborne vibration amplitude to be perceptible to humans unless the receiver is in immediate proximity to the source or the road surface is poorly maintained and has potholes or bumps. Human sensitivity to vibration varies by frequency and by receiver. Generally, people are more sensitive to low-frequency vibration. Human annoyance also is related to the number and duration of events; the more events or the greater the duration, the more annoying it becomes.

Existing Setting

Study Area

The study includes the project area, and adjacent areas that could be affected by project-related noise and vibration. The study area for the noise and vibration analysis is bounded by The Embarcadero, Jackson Street, Drumm Street, Market Street, Steuart Street, and Howard Street. Four historic structures—the San Francisco Ferry Building (Ferry Building), the Agriculture Building, Pier 1, and the seawall—are also in the study area (see Section 3.8, Cultural and Paleontological Resources, for more information on the historic structures). Figure 3.7-1 illustrates the study area boundary.

Noise and Vibration Sensitive Receivers

Land uses and structures in the study area that would be susceptible or sensitive to noise and vibration were identified. Noise-sensitive receivers are based on land uses where sensitive receptors may be present or where noise-sensitive activities may occur. These include land uses where quiet is an essential element in their intended purpose, such as indoor or outdoor concert halls; residences and buildings where people sleep; and institutional land uses with primarily daytime and evening use, such as schools, places of worship, and libraries. Generally, commercial or industrial uses are not considered noise-sensitive because, in general, the activities are compatible with higher noise levels. For parks or recreation areas, it depends on how the park is used and how essential quiet is to the enjoyment of the recreation area. For the purposes of this analysis, the recreation areas in the study area were not considered noise-sensitive land uses due to the active urban nature of these areas (e.g., Justin Herman Plaza). Refer to Section 3.4, Parklands and Recreation, for more description of the recreation areas in the study area. For the purposes

of this analysis, the commercial buildings within the project area that contain office space were conservatively considered in the noise analysis due to their proximity to the construction zone.

Vibration-sensitive land uses include residences where people sleep; and other institutional uses like laboratories where the activities within the building would be particularly sensitive to vibration.

Those structures located within close proximity to the construction zone identified on Figure 2-9 that would be susceptible to vibration were also identified. As noted previously, the project area includes four historic structures, each of which are included in this analysis.

Identified sensitive receivers are illustrated on Figure 3.7-1 and described below.

- **Ferry Building.** This building is included for both noise and vibration assessments. It is in the project area, and contains a mix of commercial uses (retail shops, restaurants, and offices).
- **Agriculture Building.** This building is included for both noise and vibration assessments. It is in the project area, and contains commercial/office uses.
- **Pier 1.** This building is included for both noise and vibration assessments. It is adjacent to the project area, and contains commercial/office uses.
- **The Carnelian by the Bay.** This restaurant on the Ferry Plaza is included for both noise and vibration assessments. It is in the project area, and considered a commercial use.
- **Hotel Vitale.** This building is included for both noise and vibration assessments. It is in the study area, and considered the nearest residential use. The hotel is considered a transient residential use.
- **Seawall.** This structure is included for vibration assessment. It is in the project area.
- **Ferry Plaza.** This structure is included for vibration assessment because it is in the project area.
- **Bay Area Rapid Transit facilities.** This structure, located on the Ferry Plaza, is included for the vibration assessment because it is in the project area.
- **Golden Gate Ferry Terminal.** This structure, located on the Ferry Plaza, is included for the noise and vibration assessment. It is in the project area, and considered a commercial use.

Ambient Noise Measurements

Sound level measurements were conducted at various locations in the study area to collect representative existing noise levels for various noise-sensitive land uses. A combination of long- and short-term noise measurements were conducted, as described below.

Sound level measurements were conducted using a Larson Davis Model 820 American National Standards Institute Type 1 Sound Level Meter for short-term measurements and a Larson Davis Model 720 American National Standards Institute Type 2 Sound Level Meter for the long-term measurement. The short-term meter was mounted on a tripod roughly 5 feet above the ground to simulate the average height of the human ear above grade. The meter was equipped with a windscreen and set for slow time-response and use of the A-weighting scale. All instruments used were within their recommended laboratory calibration period, and each instrument was field-calibrated with an acoustic calibrator before and after each measurement period. All sound-level measurements were conducted in accordance with International Organization for Standardization standards (ISO 1996a, 1996b, and 1996c).

Weather conditions during the survey period were mild with clear skies and no precipitation. The air temperature varied from 66 degrees Fahrenheit to 73 degrees Fahrenheit, with 43 to 50 percent relative humidity. Winds were intermittent, with averages ranging from 0 to 7 mph.

One long-term noise measurement (24 hours) was conducted at the rooftop of the Hyatt Regency Hotel. The meter was placed at the northeastern corner of the rooftop with a clear view of the streets below, facing Market Street and Steuart Street. Audible noise sources included vehicular traffic, buses, trolleys,

Short term measurement location

Long term measurement location

Study Area Boundary

Construction Zone

Historic Structure

Note: The America's Cup project has removed all of Pier 1/2 and will remove the building located on Pier 2 prior to project construction.

N

0 200 400 FEET

Source: ESRI aerial imagery

SOUND LEVEL MEASUREMENT LOCATIONS AND SENSITIVE RECEPTORS

Downtown San Francisco
Ferry Terminal Expansion Project
San Francisco, California

28067812

FIGURE 3.7-1

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boats, and clock tower rings at the Ferry Building every 30 minutes. Although the rooftop location of the long-term measurement was not itself representative of a noise-sensitive area, it did provide a convenient location to capture the typical 24-hour variation of noise levels in the general area used to estimate 24-hour noise levels at short-term measurement sites. Table 3.7-2 includes hourly measurement results.

Table 3.7-2 indicates that L_{eq} in this noise environment are fairly constant between about 6 AM and 7 PM, and then drop off by 5 to 6 dBA during the early morning hours.

Table 3.7-2
Long-Term Measurement Results, in dBA

Date	Start Time	End Time	L_{eq}	L_{max}	L_{min}	L_{10}	L_{50}	L_{90}
June 29, 2011	13:00	14:00	67	82	64	67	66	65
	14:00	15:00	67	82	64	68	66	65
	15:00	16:00	67	83	64	68	66	65
	16:00	17:00	67	83	64	68	66	65
	17:00	18:00	67	85	63	68	66	64
	18:00	19:00	66	81	62	68	65	64
	19:00	20:00	67	83	62	68	65	63
	20:00	21:00	65	77	62	66	64	63
	21:00	22:00	65	74	62	66	64	63
	22:00	23:00	64	74	61	66	64	63
	23:00	0:00	63	73	61	65	63	62
June 30, 2011	0:00	1:00	62	73	60	63	62	61
	1:00	2:00	61	72	60	62	61	60
	2:00	3:00	61	76	59	63	61	60
	3:00	4:00	62	70	59	63	61	60
	4:00	5:00	63	72	60	64	62	61
	5:00	6:00	65	76	61	66	64	63
	6:00	7:00	66	74	62	67	65	64
	7:00	8:00	67	80	63	68	66	65
	8:00	9:00	67	82	64	68	66	65
	9:00	10:00	67	82	63	68	66	65
	10:00	11:00	66	83	63	67	65	64
	11:00	12:00	67	83	64	68	66	64
	12:00	13:00	67	81	63	68	66	64

Notes:

Long-term noise data were measured between 13:00 on June 29 and 13:00 June 30, 2011.

Average day-night sound level was 70 dBA.
Community noise equivalent level was 71 dBA.

dBA = A-weighted decibel
L_{10} = noise levels exceeded 10 percent of the measured time interval
L_{50} = noise levels exceeded 50 percent of the measured time interval
L_{90} = noise levels exceeded 90 percent of the measured time interval
L_{eq} = equivalent sound level
L_{max} = maximum equivalent sound level
L_{min} = minimum equivalent sound level

Short-term noise measurements where conducted for 20 minutes at six locations to characterize the noise environment at representative areas of outdoor human activity in the study area, as described below.

ST1 is at the Golden Gateway Tennis and Swim Club. The meter was placed at the southeastern corner of its parking lot, near tennis courts along Washington Street, and approximately 70 feet from The Embarcadero. The dominant noise source was vehicular traffic from The Embarcadero.

ST2 is in Sue Bierman Park across from the northern end of the Ferry Building. The meter was placed approximately 30 feet from The Embarcadero near the sculpture, with water running. The dominant noise source was vehicular traffic from The Embarcadero.

ST3 is across from the center of the Ferry Building near the center of Harry Bridges Plaza. The meter was placed approximately 90 feet from The Embarcadero. The dominant noise source was vehicular traffic from The Embarcadero.

ST4 is across from the southern end of the Ferry Building near the San Francisco Railway Museum and Don Chee trolley station. The meter was placed approximately 20 feet from The Embarcadero. The dominant noise source was vehicular traffic from The Embarcadero.

ST5 is at the northeastern corner of the Audiffred Building. The meter was placed approximately 30 feet from The Embarcadero and 20 feet from Mission Street. The dominant noise source was vehicular traffic from The Embarcadero.

ST6 is in the center of Justin Herman Plaza. The meter was placed approximately 140 feet from The Embarcadero. The dominant noise source was vehicular traffic from The Embarcadero. Note that this measurement was ended after 4 minutes because of music events starting in Justin Herman Plaza. However, it is considered that the data collected represents the existing environment in this area.

Table 3.7-3 presents the results of the sound level measurements, including estimated L_{day} and L_{dn} values.

Table 3.7-3
Short-Term Measurement Results, in dBA

Location ID	Start Time	End Time	L_{eq}	L_{max}	L_{min}	L_{10}	L_{50}	L_{90}	Estimated L_{day}	Estimated L_{dn}
ST1	13:02	13:22	66	81	57	69	64	60	65	68
ST2	16:16	16:36	73	85	62	76	71	67	73	76
ST3	15:38	15:58	72	84	61	74	70	67	72	75
ST4	15:02	15:22	71	83	60	75	69	64	70	73
ST5	14:22	14:42	73	86	60	76	70	66	73	76
ST6	15:27	15:31	70	83	65	73	66	65	70	73

Note:

L_{dn} and L_{day} levels at short-term measurement locations were estimated by comparing and adjusting measured short-term levels against long-term data collect at a central location in the study area.

All measurements were conducted on June 29, 2011, except ST6, which was conducted on July 13, 2011, to represent the noise level at Justin Herman Plaza.

dBA = A-weighted decibel
L_{10} = noise levels exceeded 10 percent of the measured time interval
L_{50} = noise levels exceeded 50 percent of the measured time interval
L_{90} = noise levels exceeded 90 percent of the measured time interval
L_{day} = equivalent sound level during daytime hours
L_{dn} = Day-Night Average Noise Level
L_{eq} = equivalent sound level
L_{max} = maximum equivalent sound level
L_{min} = minimum equivalent sound level

As presented in Table 3.7-2, the L_{dn} value at the long-term measurement location was 70 dBA L_{dn}. In addition, Table 3.7-3 includes the estimated L_{dn} ranging from 68 dBA to 76 dBA. The ambient noise environment was relatively high due to the nearby heavy roadway and trolley traffic.

Regulatory Setting

Federal

The Noise Control Act of 1972

The Noise Control Act (42 United States Code Chapter 4901, et seq.) directs the U.S. Environmental Protection Agency (U.S. EPA) to develop noise level guidelines, which would protect the population from the adverse effects of environmental noise. The U.S. EPA published a guideline (U.S. EPA, 1974) recommending that the acceptable noise level limits affecting residential land use be 55 dBA L_{dn} for outdoors, and 45 dBA L_{dn} for indoors. The agency is careful to stress that these recommendations contain a factor of safety and do not consider technical or economic feasibility issues, and therefore should not be construed as standards or regulations.

Federal Transit Administration Guidelines

The Federal Transit Administration (FTA) has published guidance for assessment of noise and vibration impacts for transit projects, including construction activity and operation of ferry boats and ferry terminals (FTA, 2006). The "transit project" impact criteria, described below, would apply to the project.

FTA has developed three "sensitive" land use categories to evaluate the compatibility of predicted noise levels, as described below.

- Category 1 includes land where quiet is an essential element, such as outdoor amphitheaters;
- Category 2 includes residences where people sleep; and
- Category 3 includes institutional buildings where quiet is important, such as schools, libraries, and churches.

Categories 1 and 3 use the hourly L_{eq}, whereas Category 2 uses L_{dn}. Such criteria recognize the heightened community annoyance caused by late-night or early-morning operations, and respond to the varying sensitivities of communities to projects under different ambient noise conditions. The noise criteria are to be applied *outside of building locations* for residential land use and at the *property line* for parks and other significant outdoor use (FTA, 2006).

State

Title 14 of the California Code of Regulations, Chapter 3, "Guidelines for Implementation of the California Environmental Quality Act (CEQA)," requires that a project's noise and vibration effects on humans and structures be assessed in the environmental document.

Local

The City and County of San Francisco (CCSF) has both a General Plan and Ordinance.

The primary focus of the noise-related policies contained in the San Francisco General Plan is to protect new noise-sensitive development from existing noise exposure. Therefore, the these policies would not apply to this project, because the project would not develop new noise-sensitive land uses.

City ordinance, Article 29, Regulation of Noise, includes regulations and policies related to construction equipment, construction work at night, noise limits, and variances. Sections 2907 and 2908 would apply to project construction activities, and Section 2909 would apply to operational noise sources.

Section 2907 – Construction Equipment

(a) Except as provided for in Subsections (b), (c), and (d) hereof, it shall be unlawful for any person to operate any powered construction equipment if the operation of such equipment emits noise at a level in excess of 80 dBA when measured at a distance of 100 feet from such equipment, or an equivalent sound level at some other convenient distance.

(b) The provisions of Subsection (a) of this Section shall not be applicable to impact tools and equipment, provided that such impact tools and equipment shall have intake and exhaust mufflers recommended by the manufacturers thereof and approved by the Director of Public Works or the Director of Building Inspection as best accomplishing maximum noise attenuation, and that pavement breakers and jackhammers shall also be equipped with acoustically attenuating shields or shrouds recommended by the manufacturers thereof and approved by the Director of Public Works or the Director of Building Inspection as best accomplishing maximum noise attenuation.

(c) The provisions of Subsection (a) of this Section shall not be applicable to construction equipment used in connection with emergency work.

(d) Helicopters shall not be used for construction purposes for more than two hours in any single day or more than four hours in any single week.

Section 2908 – Construction Work at Night

It shall be unlawful for any person, between the hours of 8:00 PM of any day and 7:00 AM of the following day to erect, construct, demolish, excavate for, alter or repair any building or structure if the noise level created thereby is in excess of the ambient noise level by 5 dBA at the nearest property plane, unless a special permit therefore has been applied for and granted by the Director of Public Works or the Director of Building Inspection. In granting such special permit the Director of Public Works or the Director of Building Inspection shall consider: if construction noise in the vicinity of the proposed work site would be less objectionable at night than during daytime because of different population levels or different neighboring activities if obstruction and interference with traffic, particularly on streets of major importance, would be less objectionable at night than during daytime; if the kind of work to be performed emits noises at such a low level as to not cause significant disturbance in the vicinity of the work site; if the neighborhood of the proposed work site is primarily residential in character wherein sleep could be disturbed; if great economic hardship would occur if the work were spread over a longer time; if the work will abate or prevent hazard to life or property; and if the proposed night work is in the general public interest. The Director of Public Works or the Director of Building Inspection shall prescribe such conditions, working times, types of construction equipment to be used, and permissible noise emissions, as required in the public interest.

The provisions of this Section shall not be applicable to emergency work.

Section 2909 – Noise Limits

(b) **Commercial and Industrial Property Noise Limits.** No person shall produce or allow to be produced by any machine or device, music or entertainment or any combination of same, on commercial or industrial property over which the person has ownership or control, a noise level more than 8 dBA above the local ambient at any point outside of the property plane. With respect to noise generated from a licensed Place of Entertainment, in addition to the above dBA criteria a

secondary low frequency C-weighted decibel (dBC) criteria shall apply to the definition above. No noise or music associated with a licensed Place of Entertainment shall exceed the low frequency ambient noise level (45 dBC for interior residential noise, and 55 dBC in all other locations) by more than 8 dBC.

(c) **Public Property Noise Limits.** No person shall produce or allow to be produced by any machine or device, or any combination of same, on public property, a noise level more than ten dBA above the local ambient at a distance of twenty-five feet or more, unless the machine or device is being operated to serve or maintain the property or as otherwise provided in this Article.

(d) **Fixed Residential Interior Noise Limits.** In order to prevent sleep disturbance, protect public health and prevent the acoustical environment from progressive deterioration due to the increasing use and influence of mechanical equipment, no fixed noise source may cause the noise level measured inside any sleeping or living room in any dwelling unit on residential property to exceed 45 dBA between the hours of 10:00 PM to 7:00 AM or 55 dBA between the hours of 7:00 AM to 10:00 PM with windows open except where building ventilation is achieved through mechanical systems that allow windows to remain closed.

(e) **Noise Caused By Activities Subject To Permits From the CCSF.** None of the noise limits set forth in this Section apply to activity for which CCSF has issued a permit that contains noise limit provisions that are different from those set forth in this Article.

Section 2910 – Variances

The Directors of Public Health, Public Works, Building Inspection, or the Entertainment Commission, or the Chief of Police may grant variances to noise regulations, over which they have jurisdiction pursuant to enforcement. All administrative decisions granting or denying variances are appealable to the San Francisco Board of Appeals.

3.7.3 Impact Evaluation

The analysis considers whether the project would result in:

- Project-related operational noise exposure levels exceeding impact limits as defined by FTA criteria presented on Figure 3.7-2 (dependent on existing noise exposure at specific receiver location);
- Project-related construction noise levels exceeding FTA criteria as presented in Table 3.7-5 (dependent on land use and time of day);
- Project-related construction groundborne vibration levels exceeding FTA human annoyance criteria presented in Table 3.7-9 (dependent on land use type and frequency of events);
- Project-related construction groundborne vibration levels exceeding FTA damage criteria presented in Table 3.7-13 (dependent on building type); or
- Construction activities (and construction-related noise) that would be inconsistent with the CCSF'S Ordinance Section 2907 and 2908 (CCSF, 2008b).

Note that potential vibration impacts associated with the project could result from project-related vibrations being transmitted through the ground. Although some project-related vibrations could be generated from construction activities (as discussed below), no direct vibration impacts associated with the water transit operations are anticipated, and no further analysis is necessary.

In addition, groundborne noise refers to a condition where noise is experienced inside a building or structure as a result of vibrations produced outside of the building, and transmitted as ground vibration between the source and receiver. Groundborne noise can be problematic in situations where the primary airborne noise path is blocked, such as in the case of a subway tunnel passing in close proximity to homes

or other noise-sensitive structures. However, proposed noise and vibration-generating activities for this project would be above ground, where the airborne noise and surface vibration would be present. Any potential groundborne noise from construction activities would be imperceptible, and therefore would have no impact. Groundborne noise is therefore not discussed further.

Direct Impacts

No Action Alternative

The No Action Alternative does not include any facilities or fixed noise sources that would generate any substantial operational noise. However, a limited increase in Water Emergency Transportation Authority (WETA) vessel operations at the Downtown San Francisco Ferry Terminal (Ferry Terminal) would occur under the No Action Alternative. The effects of increased vessel operation are analyzed below under Indirect Impacts.

Action Alternative

The proposed project facilities do not include any facilities or fixed noise sources that would generate any substantial operational noise. The project would include an emergency generator, which could represent a potential audible noise source, but it would only be used under certain, very limited circumstances (during emergencies and for testing). This would not be considered normal operating conditions for the project. Therefore there would be no direct noise and vibration impacts expected from project operation. However, the proposed project would develop facilities at the Ferry Terminal that would accommodate an increase in WETA vessel operations at the Ferry Terminal consistent with WETA's Implementation and Operations Plan. The effects of increased vessel operation are analyzed below under Indirect Impacts.

Indirect Impacts

Impact 3.7-1: Potential Impact of Water Transit Operations on Adjacent Noise-Sensitive Land Uses

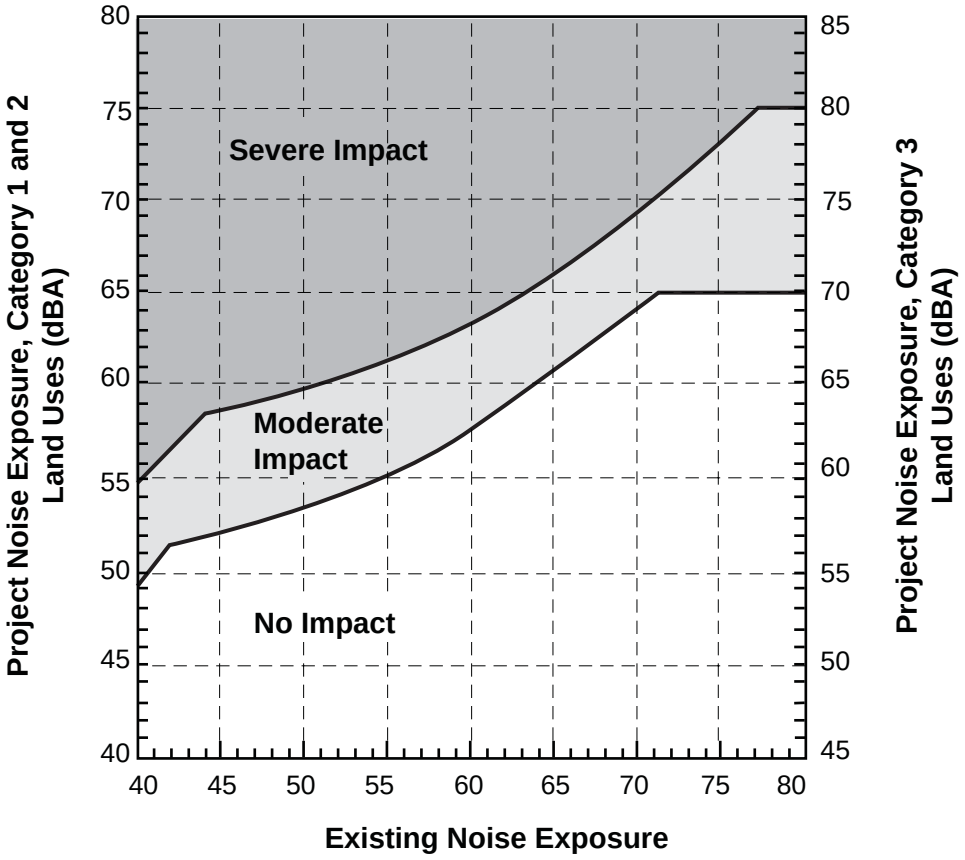
No Action Alternative

Under the No Action Alternative, no new facilities would be constructed, and the Ferry Terminal would generally operate as it does today. However, under the No Action Alternative, WETA vessel arrival during the AM peak period (i.e., between 6:30 and 9:00 AM) could increase from 14 to 20. The analysis of the Action Alternative, below, indicates that even an increase in water transit vessel arrivals from 14 to 57 arrivals during the AM peak period would not result in significant increases in noise. Therefore, because the No Action Alternative would result in fewer additional vessels than the proposed project, there would be no impact from potential noise increases.

Action Alternative

The proposed project would develop facilities at the Ferry Terminal that would accommodate an increase in WETA vessel operations at the Ferry Terminal consistent with WETA's Implementation and Operations Plan. The increase in vessel operations at the Ferry Terminal could increase noise levels at the site, potentially affecting nearby noise-sensitive land uses.

The noise general assessment for the increase in water transit operations is based on the procedure developed in Chapter 5 of the FTA Manual, which requires a determination of both the existing noise environment in the project study area, and the predicted project noise exposure. The existing noise exposure values at sensitive receiver locations were determined by a noise measurement program, and the



Note:
Noise exposure is in terms of
L_{eq} (h) for Category 1 and 3 land uses,
L_{dn} for Category 2 land uses

NOISE IMPACT CRITERIA FOR TRANSIT PROJECTS

Downtown San Francisco
Ferry Terminal Expansion Project
28067812 San Francisco, California

FIGURE 3.7-2

1/22/13 vsa/hk...T:\WETA\Draft EIR-EIS\3ADEIS-EIR\Fig3_7_2_noise_criteria.ai

future noise levels from the proposed project are predicted as described below. This methodology is consistent with the U.S. EPA's Guidelines for Preparing Environmental Impact Statements on Noise (National Academy of Sciences, 1977).

The increase in water transit vessel traffic would result in two future noise sources: 1) vessel operations; and 2) fog horn soundings from the vessels. The following referenced noise levels of each noise source are published in the FTA Manual, Chapter 5, Table 5-5.

- **Water Transit Vessel (no fog horn sounded) –** 97 sound exposure level in dBA at 50 feet (based on four vessel landings in 1 hour); and
- **Water Transit Vessel (fog horn sounded) –** 100 sound exposure level in dBA at 50 feet (based on four vessel landings in 1 hour).

The noise levels expected from the increase in water transit operations were predicted based on Table 5-6 of the FTA Manual, which describes the computation process of equivalent sound level and the L_{dn} at 50 feet from the noise source.

Figure 3.7-2 presents the criteria for FTA's three levels of impact: No Impact, Moderate Impact, and Severe Impact. As shown in the figure, the criterion for each level of impact is on a sliding scale, dependent on both the existing noise exposure and the predicted project-related noise exposure. Noise impacts associated with an increase in water transit operations were assessed using Noise Impact Criteria presented on Figure 3.7-2.

With the proposed improvements, AM peak vessel arrivals could increase from 14 to approximately 52 to 57 by 2035. Quantitative noise impact analysis was conducted for the Action Alternative to evaluate the potential impacts related to the increase in vessel arrivals. Because the hourly water transit operation schedule for 2035 is not available, the following assumptions were used to conservatively assess the future noise generated by WETA vessel operations.

- Daytime peak-hour WETA vessel arrivals would be 22.8 vessels per hour between 7:00 AM and 10:00 PM;
- Vessel operations were assessed assuming the fog horn would be sounded.
- Nighttime WETA vessel arrivals would include 11.4 vessels between 6:00 AM and 7:00 AM; and
- No nighttime water transit operation would occur between 10:00 PM and 6:00 AM.

Based on the assumptions and impact evaluation described above, Table 3.7-4 presents the project-related noise levels, and indicates whether these levels would exceed the FTA impact thresholds at the noise-sensitive receivers in the study area. As described above in the Noise and Vibration Sensitive Receivers subsection of Section 3.7.2, Affected Environment, office spaces would not typically be considered noise-sensitive land uses; but for the purposes of this analysis, the office spaces located in the project area were conservatively considered Land Use Category 3.

As shown in Table 3.7-4 (on the following page), operation of the additional water transit vessels at the Ferry Terminal would not exceed FTA thresholds.

National Environmental Policy Act (NEPA) Determination. The increase in water transit vessel operation would result in no impacts on adjacent noise-sensitive land uses.

CEQA Determination. The increase in water transit vessel operation would have less-than-significant impacts on adjacent noise-sensitive land uses.

Table 3.7-4
Water Transit Operation Noise Impacts

Receiver	FTA Land Use Category[1]	Distance between the Receiver and Closest Gate	Existing Noise Level[2]	Projected Noise Level[2]	FTA Impact Thresholds[2]	Impacts
Hotel Vitale	2	540 feet	73 dBA L_{dn}[3]	49 dBA L_{dn}	66 dBA L_{dn}	No Impact
Ferry Building	3	200 feet	72 dBA L_{day}[4]	58 dBA L_{day}	71 dBA L_{day}	No Impact
Agriculture Building	3	150 feet	72 dBA L_{day}[4]	59 dBA L_{day}	71 dBA L_{day}	No Impact
Pier 1	3	80 feet	68 dBA L_{day}[5]	61 dBA L_{day}	68 dBA L_{day}	No Impact
Golden Gate Transit Terminal	3	300 feet	66 dBA L_{day}[6]	53 dBA L_{day}	67 dBA Lday	No Impact
The Carnelian by the Bay	3	200 feet	64 dBA L_{day}[6]	55 dBA L_{day}	66 dBA L_{day}	No Impact

Source: URS, 2012a.

Notes:

[1] FTA Land Use Categories:
Category 2 includes residences where people sleep; and
Category 3 includes institutional buildings where quiet is important, such as schools, libraries, and churches. This category can be applied to office spaces.

[2] L_{dn} value is used for Category 2 receiver and L_{day} value is used for Category 3 receiver.

[3] Existing noise level is based on the survey at ST4 (see Table 3.7-3).

[4] Existing noise level is based on the survey at ST3, which is considered representative location for the Ferry Building and Agriculture Building, because noise sources (vehicular and trolley traffic on The Embarcadero) are the same.

[5] Existing noise level is based on the survey at ST2 with the distance attenuation rate of 3 dBA per doubling of the distance.

[6] Existing noise level is based on the survey at ST3 with the distance attenuation rate of 3 dBA per doubling of the distance.

Impact Thresholds are based on Moderate Impact per FTA Manual.

Vessel operations assumed fog horn in use.

dBA = A-weighted decibel
FTA = Federal Transit Administration
L_{day} = equivalent sound level during daytime hours
L_{dn} = day-night average noise level

Construction Impacts

The No Action Alternative would not result in any physical changes to the Ferry Terminal, and no construction activities would be required. Therefore, there would be no construction impacts to noise and vibration.

Impact 3.7-2: Potential Impact of Construction and Demolition Equipment other than Impact Tools on Adjacent Noise-Sensitive Land Uses

See Impact 3.7-3 for a discussion of construction impacts related to the use of impact tools. The following impact discussion is focused on noise generated from general construction equipment.

As described in Section 2.4.6, construction activities could take place between 7:00 AM and 8:00 PM, 7 days a week, consistent with the requirements of the CCSF Section 2908. Construction and demolition activities would be varied from phase to phase, and would include, but are not limited to, demolition of existing pile-supported deck structures, removal of piles, dredging, construction of new pile-supported deck structures, and a variety of site finishing activities such as assembling canopies, finishing concrete surfaces, and paving.

CCSF Ordinance Section 2907 also regulates construction equipment as follows:

No powered construction equipment (excluding impact tools) may be used if the operation of such equipment emits noise at a level in excess of 80 dBA when measured at a distance of 100 feet.

The CCSF Ordinance requires that each individual piece of construction equipment used not exceed 80 dBA at 100 feet (CCSF, 2008b). WETA and its contractors could comply with this ordinance through the selection of the construction equipment used on site, such as the selection of lower noise emission ratings when possible, or the use of enclosures, mufflers, or shrouds. Compliance with this ordinance is required and would be enforced by the San Francisco Department of Building Inspection.

Impacts from construction and demolition activities were further assessed by applying the FTA Manual methodology, FTA Manual, Section 12.1. This methodology assumes that the two loudest pieces of construction equipment would operate simultaneously at the same location under full power. Note that the pile-driving activity has been analyzed separately under Impact 3.7-3.

Table 3.7-5 presents FTA-suggested construction noise criteria by land use during daytime and nighttime hours.

Table 3.7-5
FTA Construction Noise Criteria (1-hour L_{eq} dBA)

Land Use	Daytime (7:00 AM to 10:00 PM)	Nighttime[1] (10:00 PM to 7:00 AM)
Residential	90	80
Commercial	100	100

Source: FTA, 2006.
Notes:
[1] Nighttime is included for informational purposes; no nighttime construction is anticipated for the proposed project construction.
dBA = A-Weighted decibels
L_{eq} = equivalent sound level

If two pieces of construction equipment (each producing noise levels of 80 dBA at 100 feet, per CCSF's Ordinance) are operated at the same time, under full power, and at the same location, the resulting noise level would be 83 dBA at 100 feet. Therefore, this analysis considers whether construction noise levels of 83 dBA at 100 feet would exceed the FTA thresholds, presented in Table 3.7-5, at the noise-sensitive land uses in the study area.

Based on the impact thresholds presented in Table 3.7-5, and on a construction noise level of 83 dBA at 100 feet, Table 3.7-6 identifies the distances at which the FTA thresholds could be exceeded.

Table 3.7-6
Distance from Construction Equipment (feet) where Potential Noise Impacts Could Occur

Land Use	Daytime (7:00 AM to 10:00 PM)	Nighttime[1] (10:00 PM to 7:00 AM)
Residential	45	145
Commercial	15	15

Source: URS, 2012a.
Note:
[1] Nighttime is included for informational purposes; no nighttime construction is anticipated for the proposed project construction.

Nighttime construction is not anticipated for the proposed project, and therefore would not result in any impacts to nearby land uses.

Table 3.7-7 presents the distances from the closest point of the project construction zone, shown on Figure 2-9, to each noise-sensitive receiver in the project vicinity.

Table 3.7-7
Distance from the Construction Zone to Noise-Sensitive Receivers

Noise-Sensitive Receivers	Land Use	Distance to the Closest Construction Zone (feet)
Hotel Vitale	Residential	230
Ferry Building	Commercial	30[1]/55[2]
Agriculture Building	Commercial	5
Pier 1	Commercial	25
The Carnelian by the Bay	Commercial	220
Golden Gate Transit Terminal	Commercial	250

Source: URS, 2012a.

Notes:

[1] This is the distance to the construction zone in the North Basin (excluding the portion of the construction zone for the Gate B canopy installation, which would be considered a minor construction activity from a noise and vibration perspective, and not representative of project construction activities).

[2] This is the distance to the construction zone in the South Basin.

Distances are estimated based on the construction zone shown on Figure 2-9.

As presented above, the Hotel Vitale is not within 45 feet of the construction zone. Therefore, general construction noise levels would not exceed the FTA thresholds for residential land uses.

For commercial land uses, only the Agriculture Building is within 15 feet of the construction zone. At this location, noise from general construction activities could exceed the FTA thresholds within 15 feet of the Agriculture Building.

The installation of the weather protection canopy for Gate B in the North Basin would be within 30 feet of the Ferry Building. However, this activity would be completed in approximately 1 week and would only require minor equipment and use of tools onsite to erect the canopy, which would be delivered to the site pre-constructed. This activity, by itself, is unlikely to create noise levels that would be typical of other site construction activities like demolition and deck construction.

Mitigation Measure NOISE-1 requires that the noise-sensitive receivers in the project vicinity be notified prior to construction with information on the construction activities, and that they be provided with a number to contact for questions and concerns. Mitigation Measure NOISE-2 requires the selection of smaller and quieter construction equipment in areas where work would be within 15 feet of the Agriculture Building, to minimize construction noise impacts to the building occupants. Implementation of Mitigation Measures NOISE-1 and NOISE-2 would reduce construction-noise below FTA thresholds.

NEPA Determination. General construction noise could exceed FTA thresholds for noise-sensitive receivers in the project vicinity. With implementation of Mitigation Measures NOISE-1 and NOISE-2, construction-related noise would be reduced and would not be adverse.

CEQA Determination. General construction noise could have potentially significant impacts to noise-sensitive receivers in the project vicinity. With implementation of Mitigation Measures NOISE-1 and NOISE-2, impacts would be reduced to a less-than-significant level.

Impact 3.7-3: Potential Impact of Pile Driving During Project Construction on Adjacent Noise-Sensitive Land Uses

All project construction activities would occur between 7:00 AM and 8:00 PM, 7 days a week, consistent with the requirements of CCSF Ordinance Section 2908. The CCSF Noise Ordinance does not have quantitative thresholds for impact tools. Therefore, the FTA construction noise impact assessment methodology and criteria are used to assess potential noise impacts from impact tools. The applicable thresholds are given in Table 3.7-5.

As described in Chapter 2, installation of piles would be required for the construction of Gates A, F, and G; Gate A Access Pier; Embarcadero Plaza; and the East Bayside Promenade. Piles could be concrete or steel, and could be driven using an impact hammer, or vibrated into place. Use of the impact hammer would produce more noise than vibrating piles into place. According to FTA Manual Table 12-1, the sound pressure level of impact pile driving is 101 dBA at 50 feet; and the sound pressure level for vibratory pile driving is 96 dBA at 50 feet. Table 3.7-8 presents the distances from pile-driving activity where noise from impact pile driving could exceed the thresholds presented in Table 3.7-5.

Table 3.7-8
Distance from Pile Driving (feet) where Noise Could Exceed FTA Thresholds

	Impact Pile Driving		Vibratory Pile Driving	
Land Use	**Daytime (7:00 AM to 10:00 PM)**	**Nighttime[1] (10:00 PM to 7:00 AM)**	**Daytime (7:00 AM to 10:00 PM)**	**Nighttime[1] (10:00 PM to 7:00 AM)**
Residential	180 feet	560 feet	100 feet	320 feet
Commercial	55 feet	55 feet	32 feet	32 feet

Source: Calculated by URS, 2012a.

Notes:

The applicable FTA thresholds are shown in Table 3.7-5.

[1] Nighttime is included for informational purposes only; no nighttime construction is anticipated for the proposed project construction.

FTA = Federal Transit Administration

Nighttime construction is not anticipated for the proposed project, and therefore would not result in any noise impacts to nearby land uses.

Based on the distances presented in Table 3.7-7, the Hotel Vitale is not within 180 feet of the construction zone. Therefore, no noise impacts are expected for residential land uses from pile-driving activities.

For commercial land uses, the Ferry Building, the Agriculture Building, and Pier 1 would all be within 55 feet of the construction zone; therefore, if impact pile driving were used within 55 feet of these buildings, noise from pile driving could exceed the FTA thresholds and could be adverse. In addition, if vibratory pile driving were used within 32 feet of the Ferry Building, the Agriculture Building, and Pier 1, noise from pile driving could exceed the FTA thresholds and could be adverse.

Neither the Carnelian by the Bay nor the Golden Gate Transit Terminal are within 55 feet of the construction zone. Therefore, no noise impact from pile driving would be expected at these two commercial uses.

Implementation of Mitigation Measures NOISE-1 and NOISE-3 would reduce impacts associated with pile driving. Mitigation Measure NOISE-3 requires implementation of quieter pile-driving methods within 55 feet of these buildings, to reduce noise levels.

NEPA Determination. Construction noise from pile-driving activities could be adverse when conducted within 55 feet of the Ferry Building, the Agriculture Building, and Pier 1. Construction noise would be reduced with implementation of Mitigation Measures NOISE-1 and NOISE-3, which require that quieter pile-driving techniques be used in these areas, and that nearby businesses be notified of construction. Therefore, construction noise from pile driving would not be adverse.

CEQA Determination. Construction noise from pile-driving activities would be potentially significant when conducted within 55 feet of the Ferry Building, the Agriculture Building, and Pier 1. Implementation of Mitigation Measures NOISE-1 and NOISE-3 requires the implementation of quieter pile-driving techniques in these areas, and notification of nearby businesses, which would reduce noise to less-than-significant levels. Therefore, construction noise from pile driving would be less than significant with mitigation incorporated.

Impact 3.7-4: Vibration from Project Construction that Could Result in Human Annoyance

Groundborne vibration impacts are based on the estimated maximum RMS vibration levels for repeated events from the same source. Vibration from construction could exceed thresholds related to human annoyance, and thresholds intended to prevent structural damage to adjacent buildings. The potential for structural damage is assessed in Impact 3.7-5.

Table 3.7-9 presents the thresholds used for vibration assessment of human annoyance. The criteria presented in Table 3.7-9 account for variations in the type of land use, as well as the frequency of events. Project construction would require pile driving. The criteria for acceptable groundborne vibration for human annoyance are expressed in terms of RMS vibration VdB, while the criteria for acceptable groundborne noise are expressed in terms of A-weighted sound pressure levels.

Table 3.7-9
Vibration Source Levels for Construction Equipment

Equipment		Approximate L_v at 25 feet
Pile driver (impact)	upper range	112
	Typical	104
Pile driver (vibratory)	upper range	105
	typical	93
Clam shovel drop (slurry wall)		94
Large bulldozer		87
Loaded trucks		86
Jackhammer		79
Small bulldozer		58

Source: FTA, 2006.
Notes:
Approximate L_v is based on the root-mean-square velocity in decibels, with reference to 1 micro in/sec
in/sec = inches per second
L_v = vibration level
PPV = peak particle velocity

The FTA Manual identifies three categories of land uses for consideration in a vibration assessment: Vibration Category 1 – High Sensitivity; Vibration Category 2 – Residential; and Vibration Category 3 – Institutional. Hotel and apartment properties in the study area would be considered Residential uses, and are included in this assessment.

The FTA Manual suggests that for frequent events—more than 70 vibration events of the same source per day—the threshold where the residential users could be affected by vibration is 75 VdB. For occasional events—between 30 and 70 vibration events of the same source per day—the threshold is 78 VdB. For infrequent events—fewer than 30 vibration events of the same kind per day—the threshold is 83 VdB.

During construction, groundborne vibration levels depend on the construction equipment used, and the soil type in the vicinity of the construction site. According to the FTA Manual, construction-related groundborne vibrations can reach audible and perceptible ranges in buildings near a construction site, and at levels well below thresholds that could cause structure damage.

Table 3.7-9 presents vibration levels for various types of construction equipment.

Table 3.7-10 presents the distances from construction where construction equipment could exceed the FTA thresholds for human annoyance. Note that there are no Category 1 receivers in the vicinity of the project site.

Table 3.7-10
Distance from Project Construction where Potential Vibration Could Exceed FTA Thresholds Related to Human Annoyance (feet)

Equipment		Residential/Category 2 Receivers		
		Frequent[1]	Occasional[2]	Infrequent[3]
Pile driver (impact)	upper range	540	427	291
	Typical	291	231	158
Pile driver (vibratory)	upper range	315	250	170
	Typical	125	100	68
Clam shovel drop (slurry wall)		135	108	73
Large bulldozer		79	63	43
Loaded trucks		73	58	40
Jackhammer		43	34	23
Small bulldozer		9	7	5

Source: Calculated by URS, 2012a.

Notes:

The distances presented in this table would only apply if the equipment, except pile driving, were operated onshore. If the equipment is on a construction barge, then with the exception of pile driving, vibration would not transmit to the nearby land uses.

1 "Frequent Events" is defined as more than 70 vibration events of the same source per day.
2 "Occasional Events" is defined as between 30 and 70 vibration events of the same source per day.
3 "Infrequent Events" is defined as fewer than 30 vibration events of the same kind per day.

Note that, with the exception of a pile driver, the construction equipment operated on a barge would not generate groundborne vibration that would reach onshore receivers. Because the pile is driven to the ground, the groundborne vibration would travel through the bottom sediments to sensitive receivers. Therefore, with the exception of pile driving, the distances shown in Table 3.7-10 would only be applicable if the equipment were operated onshore or on the deck and pile structures in the project area.

As a conservative approach, it is assumed the project construction vibration events would be "frequent" events (i.e., be more than 70 events from the same source per day, as shown in Table 3.7-10).

The Hotel Vitale is approximately 230 feet from the construction zone (see Table 3.7-7). Therefore, the noise-sensitive receivers at the hotel could be adversely affected by vibration from impact pile driving, and potentially from vibratory pile driving, if these activities occur within the distances presented in Table 3.7-10.

Implementation of Mitigation Measures NOISE-1 and NOISE-3 would minimize vibration from project construction by requiring construction notification, vibration monitoring, and selection of appropriate pile-driving techniques.

NEPA Determination. Vibration from pile driving could adversely affect the residential uses at the Hotel Vitale, causing annoyance. Implementation of Mitigation Measures NOISE-1 and NOISE-3 requires construction notification, implementation of vibration monitoring, and appropriate pile-driving techniques in these areas, which would reduce vibration from pile driving. Therefore, construction vibration as it relates to human annoyance from pile driving would not be adverse.

CEQA Determination. Vibration from pile driving could significantly affect the residential uses at the Hotel Vitale, causing annoyance. Implementation of Mitigation Measures NOISE-1 and NOISE-3 requires construction notification, implementation of vibration monitoring, and appropriate pile-driving techniques in these areas; and would reduce impacts to less-than-significant levels. Therefore, construction vibration as it relates to human annoyance from pile driving would be less than significant with mitigation incorporated.

Impact 3.7-5: Damage to Structures Caused by Vibration from Project Construction

Groundborne vibration from project construction activities has the potential to exceed thresholds designed to prevent structure damage.

The assessment of the potential for construction activities to cause structural damage is based on FTA criteria presented in Table 3.7-11, and the potential equipment vibration levels presented in Table 3.7-12 (on the following page).

Table 3.7-11
Vibration Levels that have the Potential to Cause Structural Damage

Building Category	PPV (in/sec)	Approximate L_v
I. Reinforced concrete, steel, or timber (no plaster)	0.5	102
II. Engineered concrete and masonry (no plaster)	0.3	98
III. Nonengineered timber and masonry buildings	0.2	94
IV. Buildings extremely susceptible to vibration damage	0.12	90

Source: FTA, 2006.

Notes:

Approximate L_v is based on the root-mean square velocity in decibels, with reference to 1 micro-inch/sec.

in/sec = inches per second
L_v = vibration level
PPV = peak particle velocity

Table 3.7-12
Vibration Source Levels for Construction Equipment

Equipment		Approximate PPV at 25 feet (in/sec) for Structural Damage
Pile driver (impact)	upper range	1.518
	Typical	0.644
Pile driver (vibratory)	upper range	0.734
	Typical	0.170
Clam shovel drop (slurry wall)		0.202
Large bulldozer		0.089
Loaded trucks		0.076
Jackhammer		0.035
Small bulldozer		0.003

Source: FTA, 2006.
Notes:
in/sec = inches per second
PPV = peak particle velocity

The FTA categories presented in Table 3.7-11 do not describe every possible construction type that could be present near a project construction zone, but instead represent a range of construction types with conservatively assigned thresholds intended to represent a scale of the structure's sensitivity to vibration. This would include a wide variety of vibration sources, such as vibration generated by nearby underground subway trains passing, or "vibration" triggered by a seismic event—not just vibration generated by construction activities. Structures and buildings assigned a Category I would be considered those most able to withstand vibration effects, and Category IV buildings would be considered those least able to withstand vibration effects. Seven buildings and two structures were considered in the vibration analysis. Each building and structure was assigned a category from Table 3.7-11 that best reflected the building or structure's ability to withstand vibration. Where necessary, the information provided in the documents referenced in the FTA manual were also used to assist in the assignment of the appropriate building category. The buildings assessed include the Hotel Vitale, Pier 1, Ferry Building, the Carnelian by the Bay, Bay Area Rapid Transit's (BART's) facilities on and beneath the Ferry Plaza, Golden Gate Transit Terminal, and the Agriculture Building. Each of these buildings is shown on Figure 3.7-1. The Hotel Vitale, Pier 1, Ferry Building, Carnelian by the Bay, Golden Gate Transit Terminal, and BART's facilities were conservatively considered Category II buildings for the purposes of this analysis. In addition, based on its construction type and condition, the Agriculture Building was also considered a Category II building (Simpson Gumpertz & Heger, 2012). Two structures were also considered in this assessment, the seawall and the Ferry Plaza. Because it functions as a retaining wall, the seawall is likely a Category I; however, due to its age and historic resource status, it was conservatively considered a Category II structure. The Ferry Plaza is a modern construction. It was built as a support structure and is currently used for heavy loading activities (e.g., Ferry Plaza Farmer's Market). Therefore, the Ferry Plaza was assessed as a Category I structure.

Table 3.7-13 (on the following page) presents the distances from a vibration source where vibration from construction activities has the potential to exceed the FTA thresholds presented in Table 3.7-11, and therefore has the potential to result in structural damage.

Table 3.7-13
Distance from Project Construction where Potential Vibration Impacts Could Result in Structural Damage (feet)

Equipment		Building Category II/ Engineered Concrete	Building Category I/ Reinforced Concrete, Steel, or Timber
Pile driver (impact)	upper range	73	53
	typical	42	30
Pile driver (vibratory)	upper range	45	33
	typical	17	13
Clam shovel drop (slurry wall)		19	14
Large bulldozer		11	8
Loaded trucks		10	8
Jackhammer		6	5
Small bulldozer		1	1

Source: URS, 2012a.

Notes:

Building Category I: Reinforced concrete, steel, or timber (no plaster)

Building Category II: Engineered concrete and masonry (no plaster).

The seawall, the Ferry Building, the Agriculture Building, the Carnelian by the Bay, and Pier 1 were considered Building Category II.

The Hotel Vitale is 230 feet from the construction zone, and therefore would not be adversely affected by project vibration.

The Ferry Building (Building Category II) is 30 feet from the closest point of the construction zone. Impact pile driving and vibratory pile driving have the potential to cause vibrations that would exceed the FTA thresholds in Table 3.7-11, if conducted within the distances shown in Table 3.7-13, and therefore have the potential to result in structural damage.

The Agriculture Building (Building Category II) is 5 feet from the closest point of the construction zone. If any of the construction equipment listed in Table 3.7-13, with the exception of a small bulldozer, is operated within the distances presented in Table 3.7-13, there is potential to cause vibrations that would exceed the FTA thresholds in Table 3.7-1—potentially resulting in structural damage.

The Pier 1 (Building Category II) is 25 feet from the closest point of the construction zone. Impact pile driving and vibratory pile driving, if conducted within the distances shown in Table 3.7-13, have the potential to cause vibrations that would exceed the FTA thresholds in Table 3.7-1; and therefore have the potential to result in structural damage.

The Carnelian by the Bay, Golden Gate Transit Terminal, and BART's facilities on and underneath the Ferry Plaza (Building Category II) are more than 200 feet from the closest point of the construction zone, and therefore would not be adversely affected by project vibration.

The Ferry Plaza, considered a Building Category I, is adjacent to a small area of the project construction zone (just to the southeast of the Ferry Building, as shown on Figure 3.7-1). The majority of the construction zone is more than 50 feet from the Ferry Plaza, where vibration would not be expected to exceed the FTA threshold. However, if any of the construction equipment listed in Table 3.7-13 is

operated within the distances presented in Table 3.7-13, there is potential to cause vibrations that would exceed the FTA thresholds in Table 3.7-1—potentially resulting in structural damage.

The seawall was conservatively considered a Building Category II in this analysis, and is in the construction zone. If any of the construction equipment listed in Table 3.7-13 is operated within the distances presented in Table 3.7-13, there is potential to cause vibrations that would exceed the FTA thresholds in Table 3.7-1—potentially resulting in structural damage.

Mitigation Measures NOISE-3 and NOISE-4 would reduce vibration from construction activities that could result in structural damage. These measures require that appropriate pile-driving techniques be selected, based on the distance from existing buildings; that vibration monitoring be conducted during construction; and that work be ceased and corrective measures or alternative construction methods be implemented should vibration monitoring indicate that the threshold would be exceeded. Therefore, implementation of the Mitigation Measures NOISE-3 and NOISE-4 would reduce construction-related vibration below the thresholds that could result in structural damage.

NEPA Determination. Project construction activities could produce vibration that could exceed thresholds designed to protect buildings from structural damage. With implementation of Mitigation Measures NOISE-3 and NOISE-4, vibration would be reduced and would not be adverse.

CEQA Determination. Project construction activities could produce vibration that could exceed thresholds designed to protect buildings from structural damage. With implementation of Mitigation Measures NOISE-3 and NOISE-4, impacts would be reduced to a less-than-significant level.

Cumulative Impacts

There would be no vibration cumulative impacts because the vibration impact is assessed based on individual events, not accumulated events.

Impact 3.7-6. Potential to Result in Cumulative Impacts on Noise

The potential noise from the increase in water transit vessel operation would not impact noise-sensitive receptors, and therefore would not contribute to potential cumulative adverse noise levels in the study area.

The proposed project could result in adverse noise and vibration impacts during construction. There are two projects listed in Table 3.1-1 that have the potential to result in cumulative noise impacts, when combined with the proposed project, due to their location (close proximity to the proposed project) and the potential for overlapping construction activities: Golden Gate Transit Ferry Terminal Improvements, and the Embarcadero Pedestrian Signage and Map Program. BART's Ferry Plaza Physical Barrier Project, although located within the project area, would be completed before WETA's project construction would commence.

Golden Gate Transit Ferry Terminal Improvements include accessibility upgrades to Gates C and D. The improvements are expected to include reconfiguring of the existing ramps. This project is not anticipated to result in a change in service frequency or volumes. However, construction activities could occur at the same time as the proposed project. As long as the projects comply with the San Francisco Noise Ordinance, the noise level would be 83 dBA at 100 feet when two pieces of equipment are operated under full power at the same location.

If the Golden Gate Transit Terminal Improvements and the proposed project were under construction at the same time, the expected cumulative construction noise level at the Ferry Building would be 93 dBA, and would not exceed the 100-dBA threshold presented in Table 3.7-5.[1] Therefore, no cumulative noise impact is expected for the Ferry Building. Similarly, if both projects were under construction at the same time, the estimated cumulative construction noise level at the Carnelian by the Bay would be 93 dBA, and would not exceed the 100-dBA threshold.[2] Therefore, no cumulative noise impact is expected for the Carnelian by the Bay. Other noise-sensitive land uses in the project vicinity (i.e., Agriculture Building, Pier 1, and Hotel Vitale) are farther away from the Golden Gate Transit Ferry Terminal Improvements, and therefore would not be expected to be cumulatively impacted by the two projects.

The Embarcadero Pedestrian Signage and Map Program installs pedestrian signage and maps along The Embarcadero. It is assumed that this project would not use heavy construction equipment, and that it would have a short-term construction period. Therefore, cumulative noise impacts would not be expected from this project.

NEPA Determination. The project would not contribute to cumulative adverse noise impacts.

CEQA Determination. Cumulative noise impacts would be less than significant.

3.7.4 Mitigation Measures

Mitigation Measure NOISE-1: Construction Notification

Prior to the start of construction, the owners and occupants of Pier 1, the Hotel Vitale, the Ferry Building, the Carnelian by the Bay, and the Agriculture Building (i.e., those noise-sensitive receivers listed in Table 3.7-7) will be notified of the project schedule, and that noise- and vibration-generating construction activities are anticipated. Prior to the start of the job, these businesses will be provided with the phone number of the construction foreman, or another responsible party who can be reached for noise- and vibration-related questions and concerns.

Mitigation Measure NOISE-2: Use of Smaller and Quieter Construction Equipment within 15 Feet of the Agriculture Building

When construction activities would occur within 15 feet of the Agriculture Building during a time when the building is occupied, equipment will be selected to minimize the noise generated from construction. The contractor will use smaller and quieter construction equipment with lower noise-emission ratings.

Mitigation Measure NOISE-3: Pile-Driving Technique Selection; Vibration Monitoring; and Corrective Measures to Minimize Noise and Vibration at Nearby Buildings

To reduce the effect of noise and vibration on adjacent land uses and structures, the following measures will be implemented during construction:

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[1] This estimate was calculated assuming the Golden Gate Transit Ferry Terminal Improvements would be approximately 120 feet from the Ferry Building. Therefore, the construction noise level from Golden Gate Transit Ferry Terminal Improvements would be 81 dBA at the Ferry Building. As presented in Table 3.7-7, the Ferry Building is 30 feet from the construction zone of the proposed project. Therefore, the noise level at the Ferry Building from the proposed project would be 93 dBA. Cumulatively, the construction noise level at the Ferry Building would be 93 dBA.

[2] This estimate was calculated assuming the Golden Gate Transit Ferry Terminal Improvements would be approximately 60 feet from the Carnelian by the Bay. The construction noise level from the Golden Gate Transit Ferry Terminal Improvements would be 93 dBA at the Carnelian by the Bay. As presented in Table 3.7-7, the Carnelian by the Bay is 100 feet from the construction zone of the proposed project. The noise level at the Carnelian by the Bay from the proposed project would be 83 dBA. Cumulatively, the construction noise level at the Carnelian by the Bay would be 93 dBA.

- Within 55 feet of a building (i.e., the Ferry Building, the Agriculture Building, or Pier 1), vibratory pile driving will be employed to reduce noise levels at the building to below 100 dBA.

- When vibratory pile driving occurs within 32 feet of an occupied building (i.e., the Ferry Building, the Agriculture Building, or Pier 1), noise monitoring will be conducted to ensure that noise levels at the building do not exceed 100 dBA. If necessary, noise-reducing measures will be employed to reduce noise levels at the building to below 100 dBA.

- When impact pile driving occurs within 540 feet of the Hotel Vitale, vibration monitoring will be performed to ensure that the vibration levels at the hotel do not exceed 75 VdB (the threshold for annoyance for residential land uses).

- When vibratory pile driving occurs within 315 feet of the Hotel Vitale, vibration monitoring will be performed to ensure that the vibration levels at the hotel do not exceed 75 VdB (the threshold for annoyance for residential land uses).

- When pile driving occurs within 290 feet of the Hotel Vitale, techniques to reduce vibration, such as selection of vibratory pile driving, will be applied to ensure that vibration levels at the hotel do not exceed 75 VdB (the threshold for annoyance for residential land uses).

- To ensure that vibration from construction activities does not result in damage to any of the Vibration Category II structures in the project area (the Ferry Building, the Agriculture Building, the Carnelian by the Bay, Pier 1, and the seawall), the following measures will be applied:

  – When impact pile driving occurs within 73 feet of the building, vibration will be monitored to ensure that the vibration levels at the building do not exceed 0.3 PPV.

  – Within 42 feet of an existing building, an alternative method to impact pile driving will be employed, such as vibratory pile-driving construction.

  – When vibratory pile driving occurs within 45 feet of the building, vibration will be monitored to ensure that the vibration levels at the building do not exceed 0.3 PPV.

  – Pile driving will not be implemented within 17 feet of an existing building unless it can be demonstrated that the activity will not generate vibration levels that would exceed 0.3 PPV at the building.

- To ensure that vibration from construction activities does not result in damage to the Ferry Plaza (Vibration Category I), the following measures will be applied:

  – When impact pile driving occurs within 53 feet of the Ferry Plaza, vibration will be monitored to ensure that the vibration levels at the plaza do not exceed 0.5 PPV.

  – Within 30 feet of the Ferry Plaza, an alternative method to impact pile driving will be employed, such as vibratory pile-driving construction.

  – When vibratory pile driving occurs within 33 feet of the Ferry Plaza, vibration will be monitored to ensure that the vibration levels at the plaza do not exceed 0.5 PPV.

  – Pile driving will not be implemented within 13 feet of the Ferry Plaza, unless it can be demonstrated that the activity will not generate vibration levels that would exceed 0.5 PPV at the plaza.

- Should the noise and vibration monitoring on site indicate that levels reach or exceed the thresholds indicated here, all impact work will cease, and corrective measures or alternative construction methods will be implemented to minimize the risk to the subject or structure.

Mitigation Measure NOISE-4: General Construction Equipment Measures to Minimize Vibration

To reduce construction-related vibration that has the potential to damage structures in the project area, the following measures will be implemented during construction:

- Vibrating construction equipment should be placed and operated from the construction barge, if feasible.

- When working within 20 feet of the Agriculture Building or the seawall (except when on a barge), equipment that produces less vibration when operated will be selected (refer to Table 3.7-13). If vibration-producing equipment is used within 20 feet of the Agriculture Building or the seawall, vibration will be monitored to ensure that it does not exceed 0.3 PPV. Should the onsite vibration monitoring indicate that levels reach or exceed the thresholds indicated here, all impact work will cease, and corrective measures will be implemented to minimize the risk to the subject or structure.

3.8 CULTURAL AND PALEONTOLOGICAL RESOURCES

3.8.1 Introduction to the Analysis

This section describes the cultural and paleontological resources in the project area of potential effect (APE). This evaluation of impacts assessed the potential for the project to affect the historic architectural properties and resources and archaeological resources identified in the APE, as well as the potential for the project to affect paleontological resources. The evaluation complies with Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended, and also satisfies the California Environmental Quality Act (CEQA) requirement that California public agencies identify the significant environmental impacts of their actions as they pertain to historical resources.

There are no known archaeological resources in the Archaeological APE; however, the inadvertent discovery of archaeological materials during project activities represents a potential project impact. Implementation of mitigation measures identified in this section would reduce the project's potential to result in impacts to archaeological resources. There are several historic properties in the project APE. The project has the potential to directly impact historic properties or resources in the Architectural APE; however, mitigation measures would reduce potential impacts. The proposed project elements and project construction activities also have the potential to indirectly and adversely affect historic properties through the introduction of new visual features or damage from construction vibration. Construction vibration impacts would be avoided with the implementation of the vibration mitigation measures described in Section 3.7, Noise and Vibration. Pursuant to Section 106 of the NHPA, the Federal Transit Administration (FTA) concluded that this undertaking would have no effect on archaeological resources, and no adverse effect on historic architectural resources or historic properties. The State Historic Preservation Officer (SHPO) concurred with this determination on April 15, 2013 (refer to Appendix D). No paleontological resources have been previously identified in the project area; however, the project area is considered potentially sensitive for paleontological resources. Implementation of mitigation measures would reduce potential impacts to unknown significant paleontological resources, should they be discovered.

3.8.2 Affected Environment

Existing Setting

This section presents the potential cultural resources in the project area, and an overview of the study area's prehistory, ethnography, and history. The study area is defined as the project area and areas within ½ mile of the project area. Separate, more detailed technical reports describing the archaeological and historical architectural resources in the project area have been prepared for the project, and are available from WETA (URS, 2012b; URS and JRP Historical Consulting, 2012).

Prehistoric Background

Human settlement of the San Francisco Bay region is believed to have begun during the early Holocene period, circa 10,000 years ago. At that time, the mean sea level was considerably lower than today, and San Francisco Bay was more than 30 miles inland from the current-day coastline. Sea level rose, and by 8,000 years ago, marine waters began to inundate San Francisco Bay. Except for brief periods, the mean sea level has been at or above its present level for approximately 6,000 years (Moratto, 1984:221-223).

The oldest evidence of human occupation in the San Francisco Bay region was documented in northern Santa Clara County, where radiocarbon assaying has yielded dates of circa 8000 B.C. Evidence for more recent occupations, however, is more common. Radiocarbon dates from several sites in the areas surrounding and between San Francisco and Monterey bays range between circa 5000 and 2000 B.C. Data from these sites indicate that sparse populations of hunter-gatherers occupied these areas before

2000 B.C. Between the years 2000 and 1000 B.C., bayshore- and marsh-adapted peoples began to settle in the Bay Area. By circa 1500 B.C., Utian people had settled the area around the southern end of San Francisco Bay, from which they expanded to the north, west, and south. By circa 500 B.C., Costanoan peoples occupied essentially the same territory that they would until Euro-American contact (Moratto, 1984:279).

Ethnographic Background

The project area is situated in lands occupied during the ethnographic period by speakers of Ramaytush or San Francisco Costanoan. The territory inhabited by Costanoan peoples extended from the Carquinez Strait southward to the Sur River, and from the Pacific coast eastward to the Diablo Range (Kroeber, 1976:462; Moratto, 1984:225). This area was significantly affected by the Spanish presence in California. Between 1769 and 1776, seven Spanish expeditions entered the Costanoan lands; and by the close of the eighteenth century, seven missions had been established. At the time of these early contacts, approximately 10,000 Costanoan Indians existed, inhabiting roughly 50 politically autonomous tribelets. By 1832, the Costanoan population had declined to fewer than 2,000 individuals. Most of the surviving population relocated to the missions (Cook, 1943a, 1943b). The "missionized" Costanoan were often forced to assimilate with individuals of other ethnic and/or linguistic affiliations, resulting in the disruption of Native American cultural practices.

Levy estimated that in the early 1970s, the total number of persons of Costanoan descent was greater than 200 individuals (Levy, 1978:487). In 1971, descendants of the Costanoan incorporated as the Ohlone Indian Tribe, and received title to the Ohlone Indian Cemetery. The Ohlone Indian Tribe was recently officially recognized by the United States government.

Regional Historic Background

The Hispanic Period. The California coastline was familiar to navigators by the end of the sixteenth century (Donley et al., 1979). Conversely, the interior remained unknown until the eighteenth century. Initial European exploration of the project vicinity was initiated in 1769, and lasted until 1810. During this period, a number of Spanish expeditions penetrated the territory occupied by the Costanoan peoples. In the spring of 1776, the site of San Francisco was chosen by Anza for the establishment of a mission and military post. Later that same year, the Mission San Francisco de Asís and Presidio de San Francisco were officially dedicated, and Moraga (Anza's lieutenant) took formal possession in the name of King Carlos III (Hoover et al., 1990:331-334).

Jurisdiction over what is now California was established by Mexico in April 1822. During the Mexican Period (1822 to 1848), control over this remote area by the central and local Mexican authorities was never strong. Rather, the Mexican Period was one of a slow disintegration of control by the Mexican government. In 1833, the mission lands were secularized, expropriated, and given out as private ranches during the next decade in the form of land grants (Donley et al., 1979).

The American Period. A major factor leading to the disintegration of Mexican control of California was pressure from the United States. Initial contacts were made by private citizens, who brought the news of California back to the United States, helping trigger the immigration of United States citizens into California. The Mexican government became increasingly agitated by the continued influx of United States citizens into California.

The continued friction between Mexico and the United States ultimately led to the Mexican War of 1846 to 1847.

California became part of the United States as a consequence of the United States victory over Mexico in the war. The territory was formally ceded in the treaty of Guadelupe Hidalgo in 1848, and was admitted as a state in 1850 (Beck and Haase, 1974; Bethel, 1969).

Prior to the discovery of gold at Sutter's Mill on January 24, 1848, development in the area consisted of the Spanish/Mexican facilities (i.e., the Presidio de San Francisco and Mission San Francisco de Asís) and a small settlement known as Yerba Buena, situated on the shores of the cove of the same name. The inhabitants of Yerba Buena were predominantly non-Spanish, English-speaking immigrants (e.g., United States or British citizens). Sometime before the gold rush, the inhabitants of Yerba Buena officially changed the name of their settlement to San Francisco. Following the discovery of gold, San Francisco transformed rather quickly from an isolated hamlet into a bustling center of commerce (Hoover et al., 1990:334-336; Kemble, 1957:7). According to historic accounts cited by Hupman and Chavez (Hupman and Chavez, 1995:56), after the discovery of gold, the population of San Francisco grew from 375 people in 1847 to 2,000 by February 1849, and by the end of 1849, there may have been as many as 20,000 people living in the city.

Historic Maritime Background

Although it is well-documented that aboriginal inhabitants of the region used watercraft constructed of tule (Levy, 1978:406, 492), given the poor preservation qualities of this material, it is not anticipated that such craft remain preserved in the submarine environment. Therefore, only a discussion of historic period maritime activities is provided.

The Hispanic Period. Jose de Ortega may have observed the entrance to San Francisco Bay in 1769; however, the first undisputed identification of the entrance by nonnative peoples occurred on November 28, 1770, by the expedition of Pedro Fages. Entry into San Francisco Bay from the sea first occurred in August of 1775, when Juan Manuel de Ayala began his 2-month-long nautical survey of San Francisco Bay aboard the San Carlos (Beck and Haase, 1974:17).

With Mexico's independence from Spain in 1821, previous trade restrictions enforced by the Spanish were relaxed. Merchant vessels from the United States and Europe began freely entering San Francisco Bay. In addition to the merchant vessels, an occasional whaler or man-of–war would enter San Francisco Bay to restock provisions, including wood, food, and water (Kemble, 1957:1).

American Period. With the discovery of gold at Sutter's Mill in 1848, ship traffic into San Francisco Bay increased dramatically. By July 1850, more vessels entered San Francisco Bay than departed. Some 500 ships, inside and outside the anchorage, lay abandoned by their crews, who had deserted them in hopes of finding a better life, mostly in the gold fields.

San Francisco became a major city and port almost overnight and grew at a phenomenal rate, replacing Monterey as the coast's principal port. Large docks were built so that cargo could be discharged directly onto the wharves instead of being ferried by rowboats to shore. From those docks, the cargo was distributed and sometimes reloaded onto smaller vessels to transport to various settlements.

In the 1850s, commercial fishing in San Francisco Bay began with whaling and salmon fishing. Throughout California's coastal waters, shrimp were harvested and sold. After 1870, shrimp fishing evolved into a major industry along the shores of San Pablo and San Francisco bays. Approximately 26 fishing camps or villages have been recorded in this region. During the 1870s, a significant expansion of the fishing industry occurred due to the increased immigration of fisherman from Italy, Greece, China, and Portugal. By the beginning of the twentieth century, the staple yields of the fishing industry were salmon, crabs, cod, and oysters (Hart, 1978).

Ferry enterprises traveling to Oakland, San Pablo Bay, and San Francisco flourished during the late nineteenth century and the first half of the twentieth century. San Francisco Bay was a transportation corridor for both local and international traffic. During the early part of the American period, the ferries united the sparsely populated rural communities and ranches with San Francisco. By the early 1870s, the railroad companies owned the ferries operating on San Francisco Bay. As communities in the area grew larger, local trade produced a demand for more frequent ferry schedules and for inter-urban lines to feed the ferry terminals. Despite all this success, the needs of the Bay Area were rapidly changing. Most ferry service ceased in 1939 with the completion of several bridges spanning San Francisco Bay, and the opening of the Bay Bridge to electric trains.

Methods for Identifying Existing Conditions in the Study Area

A number of tasks, including archival research, Native American consultation, and archaeological field inventory efforts, have been completed to determine whether any cultural resources have been previously identified in or adjacent to the project area, as well as to identify previous cultural resources investigations. Archival research consisted of a literature review and record search of ethnographic and historic literature and maps; federal, state, and local inventories of historic properties; archaeological base maps and site records; and survey reports on file at the Northwest Information Center (NWIC) at Sonoma State University. The NWIC is a regional clearinghouse of the California Historic Resources Information System, an arm of California's Office of Historic Preservation. The purpose of the record search was to ascertain whether any cultural resources had been previously identified in or adjacent to the project area, as well as to identify previous cultural resources investigations. In addition, archival research was conducted in various repositories and online resources, including: San Francisco Planning Department; the San Francisco Public Library; the California State Library in Sacramento; Shields Library at the University of California, Davis; and Bancroft Library at the University of California, Berkeley. Lastly, the shipwreck database maintained by the California State Lands Commission (SLC) was used to augment the data obtained for these unique resources.

A request for a review of the Sacred Lands File was submitted to the Native American Heritage Commission (NAHC) to gather information on the presence of resources important to the local Native American community. In addition, the NAHC provided a list of contacts, all of whom were notified about the project; and information on their concerns and/or knowledge of resources in the area was requested.

Lastly, both archaeological and historic architectural field visits to the project area were undertaken. The archaeological component was limited to a cursory visit of the Archaeological APE, because the APE either consists of open water, or San Francisco Ferry Building (Ferry Building) development constructed over open water. The historic architectural component, as will be described below, included an inventory of historic structures in the APE for architectural resources, as defined for the project.

Archaeology Existing Conditions

The APE as defined for archaeological resources (Archaeological APE), shown on Figure 3.8-1, includes all areas where direct impacts to archaeological resources could occur as a result of project activities. The Archaeological APE comprises those areas where ground-disturbing activities associated with project implementation would occur, and is confined to the area east of The Embarcadero, south of Pier 1, and north of Pier 14. This area is currently inundated by the waters of San Francisco Bay, with structures (e.g., piers) built over the water in the western extent of the Archaeological APE. Pursuant to Section 106 of the NHPA, FTA initiated consultation with SHPO on June 4, 2012, regarding the delineation of the APE for archaeological resources. The SHPO concurred with the FTA delineation of the APE on September 13, 2012.

A review of the Sacred Lands File by the staff of the NAHC failed to identify specific information concerning areas in the Archaeological APE. The NAHC provided a list of groups and individuals who

Archaeological Area of Potential Effects

Note: The America's Cup project has removed all of Pier 1/2 and will remove the building located on Pier 2 prior to project construction.

N

0 250 500 FEET

ARCHAEOLOGICAL AREA OF POTENTIAL EFFECTS

Downtown San Francisco
Ferry Terminal Expansion Project
San Francisco, California

28067812

FIGURE 3.8-1

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Source: USGS 7.5' Topo Series, San Francisco North Quadrangle, 1995; Shipwrecks database, State Lands Commission.

could have an interest in the project area. The Native American groups and individuals identified by the NAHC were contacted, and any information or concerns they might have regarding the project was requested. As of June 2012, no responses have been received from the Native American community concerning cultural resources in the Archaeological APE.

The record search completed by the staff of the NWIC revealed that no archaeological resources have been identified in the Archaeological APE. There are several archaeological sites, both prehistoric and historic, within ½ mile of the APE. All, however, are landside of the seawall and not in the Archaeological APE. Although no archaeological resources have been previously identified in the APE, it is not because there have been no past studies in the area. The record search revealed that numerous cultural resources investigations have occurred in the vicinity, a few of which included portions of the Archaeological APE, as listed in Table 3.8-1.

Table 3.8-1
Record Search Results:
Past Cultural Resources Studies Conducted in the Archaeological APE

Survey Number	Title	Author(s)	Year
S-005380	San Francisco waterfront, Report on Historical Resources for the North Shore and Channel Outfalls Consolidation Projects.	Roger Olmstead, Nancy Olmstead, and Allen Pastron	1977
S-013405	San Francisco Municipal Railway, Metro Turnaround Project, Historical and Cultural Resource to 1887	E.M. Rose and Associates	1988
S-17827	An Archaeological Survey Report for the Ferry Building, San Francisco, California	Holman and Associates	1995
S-023228	Finding of No Adverse Effect, BART Seismic Retrofit Project, Berkeley Hills Tunnel to Montgomery Street Station, Caltrans District 4, Alameda and San Francisco Counties, California	Caltrans	2005
S-027480	Historical Resources Evaluation Report, BART Seismic Retrofit Project, Berkeley Hills Tunnel to Montgomery Street Station, Alameda and San Francisco Counties, California	BART	2005
S-031376	Historic Properties Survey Report, I-280 Transfer Concept Program, City and County of San Francisco, 04131-995142-3M013	Caltrans	1983
S-031997	Historic Properties Survey Report, BART Seismic Retrofit Project, Berkeley Hills Tunnel to Montgomery Street Station, Alameda and San Francisco Counties, California	David Stone and Karen Foster	2005
S-302020	Archaeological Survey Report, BART Seismic Retrofit Project, Berkeley Hills Tunnel to Montgomery Street Station, Alameda and San Francisco Counties, California	Caltrans	2005

Notes:

BART = Bay Area Rapid Transit
Caltrans = California Department of Transportation
I-280 = Interstate 280

The title to all abandoned shipwrecks, archaeological sites, and historic or cultural resources on or in the tide and submerged lands of California is vested in the State and under the jurisdiction of the SLC. The online SLC Shipwreck Database (SLC, 2011) was reviewed. The SLC database is a list of shipwrecks by county, and is based primarily on historical accounts of these incidents. It should be noted that most of the location data thus refer to where the ship went down and not necessarily where it came to rest on the sea floor, which may be in a different location. Figure 3.8-2 depicts the location of the reported shipwrecks. Table 3.8-2 lists the reported shipwrecks in the general vicinity of the Archaeological APE.

Table 3.8-2
Shipwreck Data from the State Lands Commission Database

Ship's Name (Year of Wreck)	Latitude	Longitude
Alice Garrett (1888)	37° 47' 50"	122° 23' 30"
Helen Hensley (1854)	37° 47' 56"	122° 23' 30"
Reliance (1945)	37° 48' 15"	122° 23' 50"
San Carlos (1797)	37° 48' 10"	122° 23' 40"
West Wind (1876)	37° 47' 40"	122° 23' 30"

As shown on Figure 3.8-2, the purported locations of two historic shipwrecks, the *Alice Garrett* and *West Wind*, occur in close proximity to the Archaeological APE. A third wreck, the *Helen Hensley*, occurs immediately to the north.

It should be noted that the SLC database does not indicate whether the wrecked vessel was ultimately salvaged. Given the close proximity of these wrecks to the historic shoreline, it would seem likely that these vessels would have been salvaged or at least demolished, because they would have represented navigational hazards to the ship traffic that was prevalent in this area. It is assumed that repeated dredging has historically taken place in the project area to accommodate the facilities and historic ship traffic in the project area, and that this dredging would have likely dislodged any remnants of these vessels if they remained in these locations in the twentieth century. Lastly, none of the cultural resources studies listed in Table 3.8-1 identified these shipwrecks as potential resources during their investigations. Therefore, it is unlikely that these shipwrecks are present in the Archaeological APE for the project.

Historic Architecture Existing Conditions

The Architectural APE, shown on Figure 3.8-3, was established to include any historic-period building, structure, or object that may be directly or indirectly affected by implementation of the project. The general Architectural APE includes the entire Port of San Francisco (Port) Embarcadero Historic District (Embarcadero Historic District) to account for potential indirect effects. As shown on Figure 3.8-4, the Focused Architectural APE coincides with the project area boundary line where it runs north to south along the eastern edge (northbound lane) of The Embarcadero. On the northern and southern boundaries, the Focused Architectural APE goes beyond the project areas to encompass Piers 1 and 14, both of which are in the viewshed of proposed project elements, to account for potential indirect effects. Together, the general Architectural APE and the Focused Architectural APE account for all the historic properties intersected by the project, and encompass the historic properties immediately adjacent to the project that could potentially experience indirect effects, such as vibration, noise, or visual effects. Pursuant to Section 106 of the NHPA, FTA initiated consultation with the SHPO on June 4, 2012, regarding the delineation of the APE for historical architectural resources. The SHPO concurred with the FTA delineation of the APE on September 13, 2012.

Shipwreck

Archaeological Area of Potential Effects

N

0 750 1,500 FEET

ARCHAEOLOGICAL AREA OF POTENTIAL EFFECTS AND REPORTS OF HISTORIC SHIPWRECKS FROM STATE LANDS COMMISSION

Downtown San Francisco
Ferry Terminal Expansion Project
San Francisco, California

28067812

FIGURE 3.8-2

Source: USGS 7.5' Topo Series, San Francisco North Quadrangle, 1995; Shipwrecks database, State Lands Commission.

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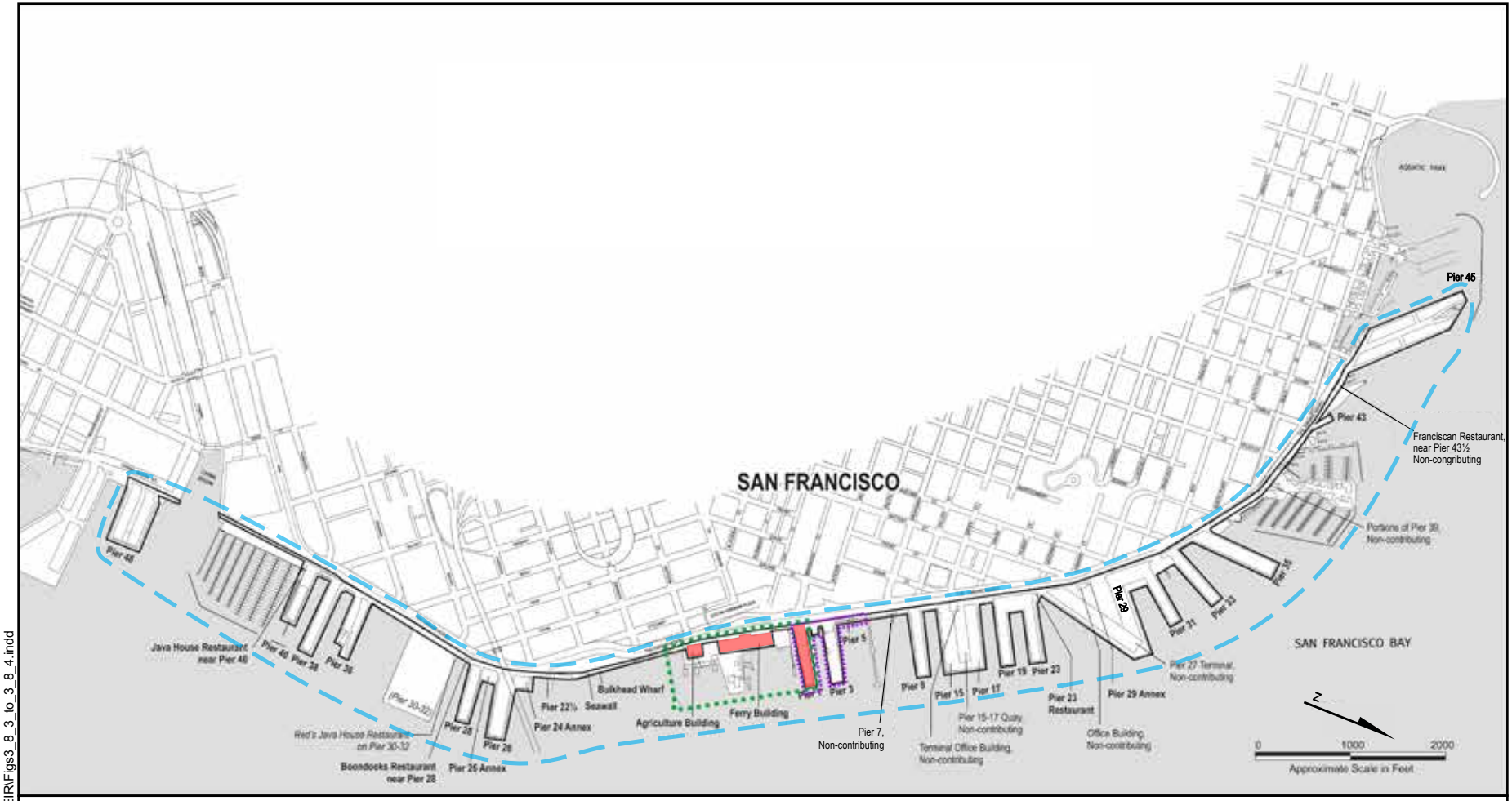


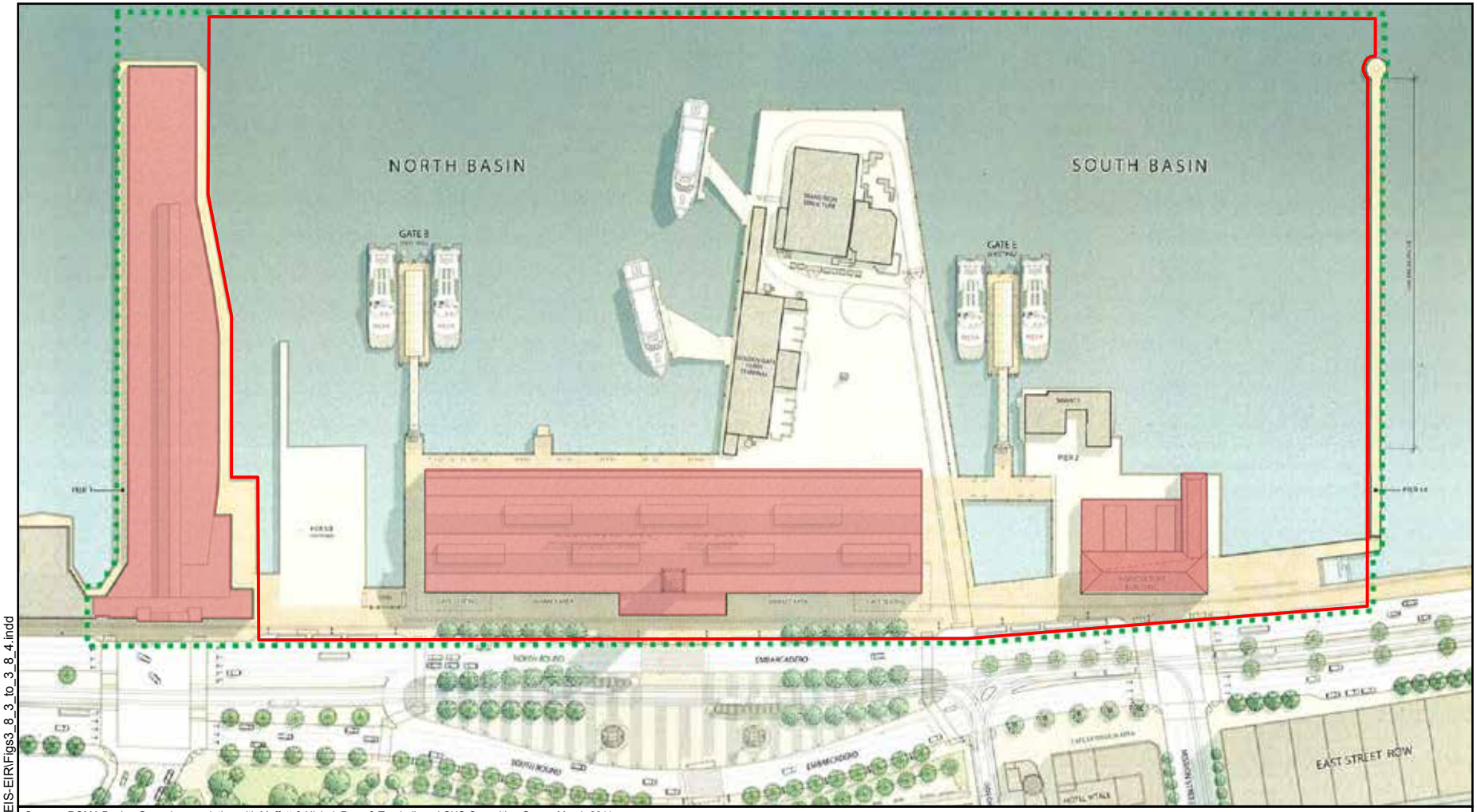
Source: Port of San Francisco Embarcadero Historic District National Register Nomination, Sketch Map, January 2006.

- Architectural APE
- Focused Historic Architectural APE for WETA Downtown San Francisco Ferry Terminal Expansion Project
- Port of San Francisco Embarcadero Historic District Boundary (Contributors in **Bold-Face** Type)
- Not Labeled: System of Pier Substructures
- Central Embarcadero Piers Historic District Boundary
- Individual Listed on the National Register of Historic Places

ARCHITECTURAL AREA OF POTENTIAL EFFECTS (APE)

Downtown San Francisco
Ferry Terminal Expansion Project
28067812 San Francisco, California

FIGURE 3.8-3



Source: ROMA Design Group in association with Moffatt & Nichol, Page & Turnbull, and CHS Consulting Group, March 2011.

Focused Architectural APE

Project Area

Individual Listed on the National Register of Historic Places

Note: The America's Cup project has removed all of Pier 1/2 and will remove the building located on Pier 2 prior to project construction.

No Scale

FOCUSED ARCHITECTURAL AREA OF POTENTIAL EFFECTS (APE) AND PROJECT STUDY AREA

Downtown San Francisco
Ferry Terminal Expansion Project
San Francisco, California

28067812

FIGURE 3.8-4

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The record search conducted by NWIC revealed that there are several historic properties in the Focused Architectural APE that are listed in the National Register of Historic Places (NRHP). Two historic districts encompass or overlap in the Focused Architectural APE: the Embarcadero Historic District; and the Central Embarcadero Piers Historic District. In addition to contributing to one or both of these districts, three properties in the Focused Architectural APE—the Ferry Building, Agriculture Building, and Pier 1—are also listed individually in the NRHP and the California Register of Historical Resources (CRHR). The "New Seawall" is also listed as a contributor of the Embarcadero Historic District, but is not individually significant.[1]

The following studies and documents pertinent to the resources in the Focused Architectural APE were provided by the Water Emergency Transportation Authority (WETA), the NRHP/National Historic Landmark Archives in Washington, DC, and from the records search completed at the NWIC. The City of San Francisco Historical Landmarks List (Historic Preservation Commission, n.d.) was also consulted, which indicated that the Ferry Building is designated City Landmark #90.

- *The Port of San Francisco Embarcadero Historic District National Register Nomination* (Corbett et al., 2006), a comprehensive evaluation of the significant pier and wharf developments along a roughly 3-mile stretch of the city's waterfront;
- *Central Embarcadero Piers Historic District National Register Nomination* (Turnbull, 2002), which includes Piers 1, 1½, 3, and 5 as its contributors;
- *Pier 1 National Register Nomination* (Hillis, 1998);
- *Ferry Building (Union Ferry Depot Building) National Register Nomination* (McGuire, 1977); and
- *Agriculture Building (Ferry Station Post Office Building) National Register Nomination* (McGuire, 1978).

The list of known historic properties with the Focused Architectural APE and the eligibility status of those properties is presented in Table 3.8-3 (on the following page).

The Focused Architectural APE for this project also contains several buildings and structures that were built fewer than 50 years ago (i.e., after 1962).[2] These include: the Ferry Plaza and Golden Gate Ferry Terminal Building, Pier 2, Sinbad's Restaurant, and Pier 14, all of which were built in the 1970s or later.[3] These buildings and structures would not be considered historic properties due to their age.

JRP Historical Consulting, LLC visited the project site and Focused Architectural APE on April 19 and May 26, 2011, to verify the presence of known historic properties, and to update and confirm the adequacy of the previous evaluations.

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[1] The Cultural Resources section of the Technical Appendices for the Final Program Environmental Impact Report for the Expansion of Ferry Transit Service in the Bay Area, prepared by URS Corporation for the Water Transit Authority in June 2003, notes that the Ferry Building rests on the eastern side of the "New Seawall," which that study concluded had the potential to be eligible for the NRHP. The reference is to San Francisco's second great seawall, which was built incrementally between 1878 and 1915 to replace an earlier structure—the "Old Seawall." In 2006, the entire New Seawall, including the segment within the project area, was identified as a contributor to the Port of San Francisco Embarcadero Historic District, which was subsequently listed on the NRHP (Corbett et al., 2006).

[2] Construction dates for these resources were ascertained through review of documents obtained through the record search, historic and current U.S. Geological Survey topographic maps, and historic aerial photography. Historic aerial photographs of the study area from 1931 through 2005 were viewed online at historicaerials.com.

[3] The Secretary of the Interior guidelines for evaluation of NRHP eligibility is for buildings, structures or features 50 years of age or older to allow for adequate historical perspective.

Table 3.8-3
Properties in the APE that Are Listed in the National Register of Historic Places and California Register of Historical Resources

Resource Name	Year Built	Period of Significance	CHRS Code[1]	NRHP Eligibility Criteria[2]
Port of San Francisco Embarcadero Historic District	1878-1938	1878-1946	1S	A, B, C
Central Embarcadero Piers Historic District	1918-1931	1918-1952	1S	A, C
Seawall	1888-1915	1888-1946	1D[3]	n/a[4]
Bulkhead Wharf	1891-1915	1891-1946	1D[3]	n/a[4]
Pier 1	1929-1931	1931-1936	1S, 1D[3,5]	A, C
Ferry Building (Union Ferry Depot Building)	1895-1903	1898-1946[6]	1S, 1D[3] (San Francisco Designated Landmark #90)	A, C
Agriculture Building (Ferry Station Post Office Building)	1915	1915-1925	1S, 1D[3]	A, C

Notes:

[1] CHRS Codes:
1D – Contributor to a district of multiple resource property listed in the NRHP by the Keeper. Listed in the CRHR.
1S – Individual property listed in the NRHP by the Keeper. Listed in the CRHR.

[2] NRHP Eligibility Codes:
A – Associated with events that have made a significant contribution to the broad patterns of our history.
B – Associated with the lives of persons significant in our past.
C – Embody distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction.

[3] Contributor to Port of San Francisco Embarcadero Historic District.

[4] Structure is a contributor but not individually listed; eligibility criteria do not apply.

[5] Contributor to Central Embarcadero Piers Historic District.

[6] The 1977 NRHP nomination did not specify a period of significance for the Ferry Building. As a contributing element of the Port of San Francisco Embarcadero Historic District (January 2006), the Ferry Building has a period of significance from its initial occupation in 1898 to 1946, for its contribution to transportation and engineering; and from 1898 to 1903 for its neo-classical Beaux Arts style.

CHRS = California Historical Resource Status
CRHR = California Register of Historical Resources
NRHP = National Register of Historic Places

Historic Properties in the Focused Architectural APE

The Focused Architectural APE for this project is along the waterfront at the foot of Market Street, on the stretch of San Francisco's Embarcadero between Washington Street and just south of Mission Street (Figure 3.8-4). Although the Focused APE covers only a small proportion of the city's nearly 3-mile-long Embarcadero, it contains historic-period built environment features that date from the earliest phases of The Embarcadero's development—namely a circa 1880s section of "New Seawall"—and well into the twentieth century. The number of resources listed on the NRHP, built over a period spanning more than half a century, reflects the site's long history as one of San Francisco's principal transportation hubs. In addition to including several resources that contribute to the Embarcadero Historic District, the Focused

Architectural APE also includes three buildings and related structures that are individually listed (see Table 3.8-3).

The following sections summarize the NRHP and CRHR eligibility status of the historic-period buildings and structures that have been identified in the Focused Architectural APE for the project.

Port of San Francisco Embarcadero Historic District

The Embarcadero Historic District stretches nearly 3 miles along San Francisco's waterfront, from Pier 45 on the north to Pier 48 on the south (Figure 3.8-3). The National Park Service listed the district on the NRHP on May 12, 2006 (NRHP Property #06000372), at which time it was automatically placed on the CRHR. The Embarcadero Historic District was determined significant under NRHP Criteria A, B, and C.

The district represents a rare surviving example of the once common "break bulk" type of port, which employed the traditional method of cargo handing (in contrast to modern containerization), in which individual boxes, crates, barrels, and the like are loaded and unloaded individually using cranes, winches, and other devices. The district consists of 47 contributing resources that include several elements common to break bulk ports: a seawall; bulkhead wharfs; and piers and their related buildings, including bulkhead buildings, transit sheds, and other small structures (Corbett et al., 2006, Section 7).

The district boundaries were drawn to include the major waterfront features, so that the inshore line follows the inside edge of the top of the seawall, defined more or less by the façades of the buildings built along The Embarcadero. The outshore line is drawn to include the buildings, piers, seawall, and portions of the bulkhead wharf that are contributors to the district; it follows the edges of these structures and excludes the water basins and noncontributing structures between them. The district is discontiguous, divided in two sections by China Basin, a water channel near the southern end of the district (Corbett et al., 2006, Section 10).

The seawall (sometimes referred to as the "New Seawall") and associated bulkhead wharf segments were evaluated for the first time as part of the Embarcadero Historic District study and are listed as contributing elements. The construction histories and character-defining features of the sections of these resources in the APE are summarized below.

Also within the boundaries of the Embarcadero Historic District are four properties that were previously listed in the NRHP, all of which are wholly or in part within the Focused Architectural APE: the Ferry Building (listed December 1, 1978, NRHP Property #78000760); the Agriculture Building (listed December 1, 1978, NRHP Property #78000756); Pier 1, listed individually (January 5, 1999, NRHP Property #98001551); and the Central Embarcadero Piers Historic District, including Piers 1, 1½, 3, and 5 (listed November 20, 2002, NRHP Property #02001390). These resources are described in further detail below.

Seawall and Bulkhead Wharf

The seawall is "a linear embankment of stone, concrete, and wood, which defines San Francisco's waterfront for more than 3 miles along a curving line from the foot of Jones Street on the north (Pier 45) to the mouth of China Basin on the east, and for an additional 500 feet south of China Basin (to Pier 48)" (Corbett et al., 2006, Section 7). The seawall is a contributing element of the Embarcadero Historic District and unifies the physical form of the district. Within the APE—and in fact throughout most of the Embarcadero Historic District—the seawall is obscured from view by the bulkhead wharves and piers built on top of it, but construction records show that it consists of an embankment of rocks set in a trench with sides that rise to a flat top. Because the seawall was built incrementally from 1878 through 1915,

with design variations from section to section, there are some dimensional differences, such as the width of the base trench, the embankment height, and the crown width.

Attached to the crest of the seawall and cantilevered into San Francisco Bay are the bulkhead wharf structures. Like the seawall, the bulkhead wharf is a linear feature consisting of separately built structures that connect end to end throughout the length of the historic district. They are horizontal platforms that rest on piles driven vertically into the seawall embankment as far as the waterfront line, which is defined by the toe of the seawall. The portions of the bulkhead wharf that contribute to the historic district date to the district's period of significance—and serve as the constructed edge of the waterfront between the piers—act as a supporting structure of buildings, and allow access between pier/transit sheds, berthed vessels, and The Embarcadero (see Figure 3.8-5).

Piers are also pile-supported horizontal platforms but unlike bulkhead wharves, they typically extend perpendicularly into San Francisco Bay and include three components: the pier substructure (consisting of pilings, caps that span the pilings, and a deck that rests on the caps); a transit shed (an enclosed warehouse building that rests on and covers most of the pier deck); and a bulkhead building (an enclosed building, usually used to house offices or passenger facilities, that rests on the bulkhead wharf and faces The Embarcadero) (Corbett et al., 2006, Section 7:81).

The relationship of the seawall, bulkhead wharf, and pier buildings is shown on Figure 3.8-5.

For the purposes of organization and to follow historical naming conventions, the authors of the Embarcadero Historic District study identified the various sections of the seawall and attached bulkhead wharf according to section number, listed in ascending order from north to south (Corbett et al., 2006, Section 7:19). The four portions of seawall and bulkhead wharf that are fully or partially in the Focused Architectural APE are Sections 7, 8a, 8b, 8, and 9a, as shown on Figure 3.8-5. Section 9a is not a contributing feature of the historic district due to loss of integrity.

Central Embarcadero Piers Historic District

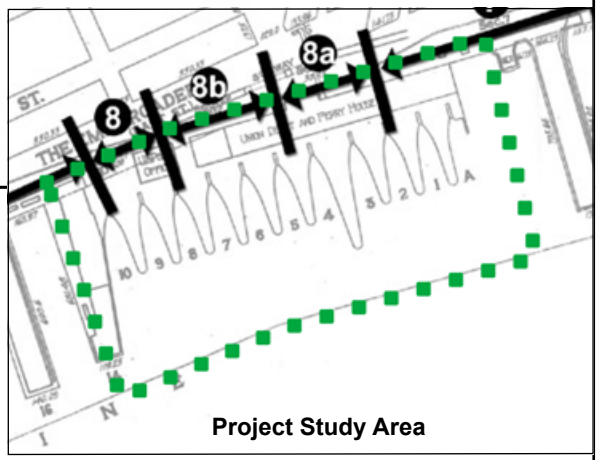
The Central Embarcadero Piers Historic District, whose contributing elements are Piers 1, 1½, 3, and 5, is along San Francisco's northeastern waterfront, immediately north of the Ferry Building (Figure 3.8-5). The National Park Service listed the district on NRHP on November 20, 2002 (NRHP Property #02001390), at which time it was automatically placed on the CRHR.

The Central Embarcadero Piers Historic District was determined significant under NRHP Criterion A at the state level, for its association with commerce and transportation in San Francisco.[4] The district is also eligible under Criterion C on the local level, as one of the two largest remaining pier groups on the Northeast Waterfront conveying the original Beaux Arts design that characterized San Francisco's waterfront in the early twentieth century.

The district boundary was drawn to encompass the contributing features, which are all along the eastern side of The Embarcadero between Washington Street and Broadway (see Figure 3.8-3).

Each of the four contributing piers was originally composed of three parts (although not all of the original elements survive): a bulkhead building, along The Embarcadero with a west-facing façade; the pier structure extending into San Francisco Bay; and a transit shed built atop the pier structure. The bulkhead buildings on Piers 1, 1½, 3, and 5 all survive and share character-defining features.

[4] The Central Embarcadero Piers Historic District is entirely within the boundaries of the Port of San Francisco Embarcadero Historic District. The Central Embarcadero Piers Historic District was nominated first, and the Port of San Francisco Embarcadero Historic District was nominated later to expand the Central Embarcadero Piers Historic District; however, both districts and district boundaries remained.



Source: Board of State Harbor Commissioners 1924 Biennial Report

Project Study Area

Section B - 1000' between Taylor and Powell Streets - Constructed 1914.
Section A - 561' between Powell and Stockton Streets - Constructed in two parts in 1914.
Section 1 - 1000' between Stockton and Kearny Streets - Constructed in two parts in 1913-14 &1914-15.
Section 2 - 1000' between North Point and Francisco Streets - Constructed in two parts in 1914-16 & 1917-19.
Section 3 - 1000' between Francisco and Lombard Streets - Constructed in three parts in 1915-16, 1917-18 & 1918-19.
Section 4 - 1000' between Lombard and Union Streets - Constructed in two parts in 1920 and 1921-22.
Section 5 - 1000' between Union and Vallejo Streets - Constructed in four parts in 1912-13, 1914-15, 1921-22 & 1930-31.
Section 6 - 800' between Vallejo and Pacific Streets - Constructed in three parts in 1916-17, 1917 & 1920.
Section 7 - 980' between Pacific and Clay Streets - Constructed in six parts in 1894-95, 1909, 1916, 1920, 1921-22 & 1929-30.
Section 8a - 392 ' between Clay and Market Streets - Constructed 1894-95.
Section 8 - 300' between Mission and point north of Howard Streets - Constructed 1915.
Section 9a - 990' south of Mission to Folsom Street - Constructed 1913 and demolished in 1975 and 1983.
Section 9b - 788' between Folsom and Harrison Streets - Constructed 1913, all but 60' was demolished in 1983.
Section 9 - 990' south of Mission to Folsom Street - Constructed in two parts in 1909-10.
Section 10 - 537' north of Beale to Main Street- Constructed 1910-11.
Section 11a - 281' south of Main to Beale Street - Constructed 1912-14.
Section 11 - 353' north of Beale to Fremont Street - Constructed 1909-10.
Section 12 - 1167' between Fremont and King Streets - Constructed in two parts in 1909.
Section 13 -600' between King and Berry Streets -Constructed in two parts in 1917-18 & 1935-36.
Pier 46 Section - 236' between Berry Street and China Basin Channel - Constructed in 1914.
Pier 48 Section - 500' north side of Pier 50 to China Basin Channel - Constructed 1928-29.

BULKHEAD WHARF AND "NEW SEAWALL" SECTIONS IN THE PROJECT AREA

Downtown San Francisco
Ferry Terminal Expansion Project
28067812 San Francisco, California

FIGURE 3.8-5

Piers 1, 1½, 3, and 5 are built on a portion of seawall constructed in 1889, which is a contributing element to the Embarcadero Historic District (2006), as discussed below.

In addition to contributing to both the Central Embarcadero Piers Historic District and Embarcadero Historic District, Pier 1 is also individually listed on the NRHP. The individual resource is discussed in further detail below.

Pier 1

Pier 1 is on the eastern side of The Embarcadero at the foot of Washington Street (Figures 3.8-3 and 3.8-4). The pier was completed in 1931 and includes the bulkhead building along The Embarcadero, the utilitarian transit shed on the San Francisco Bay side, and the finger pier upon which the transit shed is built. Pier 1 is the southernmost of a continuous façade consisting of the Pier 1, Pier 1½, and Pier 3 bulkhead buildings. The National Park Service listed Pier 1 on the NRHP on January 5, 1999 (NRHP Property #98001551), at which time it was automatically placed on the CRHR.

Pier 1 was determined significant under NRHP Criterion A at the state level, for its association with San Francisco maritime commerce and transportation. It is also significant under Criterion C in the area of architecture, as an important example of the neo-classical architecture used by the California State Harbor Commissioners' 1915 City Beautiful-inspired plan. The property boundary is the footprint of the pier structure and bulkhead building, encompassing an area of 118,313 square feet.

Pier 1 was rehabilitated during 2001 to 2002 to serve as Port and private business offices. The work was completed as a federal historic tax credit project, using the Secretary of the Interior's Standards for Rehabilitation. The project included rebuilding the deck apron, filling the interior of the transit shed for adaptive reuse, seismic repairs, and construction of a wharf between the bulkhead wharf and south apron. Original wood fender pilings were retained on the southern side of the pier (Thatcher, 2000a, 2000b, 2001; Page & Turnbull, 2002). The character-defining features on the exterior of the building remain essentially the same as described in the 1998 nomination.

Pier 1 is also a contributing element to both the Central Embarcadero Piers Historic District and the Embarcadero Historic District (see descriptions above).

Ferry Building (Union Ferry Depot Building)

The Ferry Building, known originally as the Union Ferry Depot Building, is on The Embarcadero at the foot of Market Street (Figure 3.8-3). Constructed from 1895 to 1903, the Ferry Building was one of the busiest transportation points on the Pacific Coast until the decline of water transit traffic following the completion of the Bay Bridge in 1937. The Ferry Building was listed on the NRHP on December 1, 1978. The property boundary is the footprint of the building, encompassing an area of 120,716 square feet (NRHP Property #78000760) (McGuire, 1977).

The original nomination form did not specify under which NRHP criteria the Ferry Building was eligible, nor did it establish a period of significance for the property. Its eligibility was clarified when it was identified as a contributing element of the Embarcadero Historic District (Corbett et al, 2006). The Ferry Building is significant under NRHP Criterion A at the national level, in the area of transportation, with a period of significance from its initial occupation in 1898; to 1946, which marked the dramatic decline of shipping activity after World War II. Under Criterion C, the building is also significant in engineering for its reinforced concrete design that withstood the 1906 San Francisco Earthquake, and as an important local example of the neo-classical Beaux Arts style.

During the 1950s, the Ferry Building was extensively remodeled to include office space. Beginning in 1998 and completed in 2003, the Ferry Building was renovated and redeveloped as a mixed-use property,

following the Secretary of the Interior's Standards for Rehabilitation. The project restored many original features and removed other historically unsympathetic materials and design elements, thus returning the building to a closer approximation of its original appearance, but also changing several features present at the time it was described for listing in the NRHP in 1978. Many of the building's basic character-defining features were retained or refurbished.

Most of the changes from the renovation were to the building's interior and east (Bayside) façade. The ground floor level was converted to a public foods marketplace, with thirty 8-foot-tall gates lining the nave, each of which opens to an individual shop. The upstairs level includes rows of office space.

The exterior changes to the building since 1978 are mostly confined to the eastern side, which at that time had been substantially altered from its original appearance. The renovation project replaced the existing eastern façade in its entirety with a 10-foot-deep cantilevered metal extension that runs the length of the façade, and includes a continuous row of 11-foot-tall arched windows that "provide[s] a modern interpretation of the windows that once admitted light into the second floor waiting rooms." At the foot of the building on this façade is a new, 30-foot-wide wharf for pedestrian foot traffic.

The Ferry Building is also a contributing element to the Embarcadero Historic District (Corbett et al, 2006). The Ferry Building was designated a National Historic Civil Engineering Landmark by the American Society of Civil Engineers in November 1975, and a San Francisco City Landmark #90 in 1977.

Agriculture Building (Ferry Station Post Office Building)

The Agriculture Building, originally known as the Ferry Station Post Office Building, is on The Embarcadero at the foot of Mission Street (Figures 3.8-3 and 3.8-4). It was built in 1915; and until 1925, it served as a post office, after which it was occupied by Southern Pacific and other companies. By 1933, it was occupied by the Department of Agriculture, and became known as the "Agriculture Building." The National Park Service listed the building in the NRHP on December 1, 1978. The property boundary is the footprint of the building, encompassing an area of 25,238 square feet (NRHP Property #78000756) (McGuire, 1978).

The Agriculture Building was determined significant under NRHP Criterion A at the local level, for its association with the centralization of San Francisco's postal system; and under Criterion C, in the area of architecture, as a surviving example of the Mediterranean-style government architecture designed by the California State Harbor Commissioner.

The Agriculture Building is a Mediterranean-style, two-story, steel-frame building on a granite base, with tile hip roof. Character-defining features include red brick Flemish bond, light-ochre terra cotta trim and surrounds around entries, upper beltcourse, copper cornice, wood casement windows, iron doors, and door and window pattern. A field check confirmed that the exterior of the building remains essentially the same as described in the 1978 nomination.

The Agriculture Building is also a contributing element to the Embarcadero Historic District, discussed above.

Paleontological Setting and Assessment

Paleontological resources are fossils (the remains of ancient plants and animals) and trace fossils (such as burrows or tracks) that can provide scientifically significant information on the history of life on earth. Assessments of the scientific significance of these remains are based on whether they can provide data on the taxonomy and phylogeny of ancient organisms, the paleoecology and nature of paleoenvironments in the geologic past, or the stratigraphy and age of geologic units. Fossils need not be mineralized to be of

scientific significance. In areas dominated by geologically recent sedimentation in estuarine environments (as is the case in the vicinity of the current project area), the remains of extinct Pleistocene fauna are preserved due to anaerobic (oxygen-free) conditions, and are usually unaltered and not mineralized.

This section describes the paleontological resources potential of the project area. It complies with standards and guidelines recommended by the Society of Vertebrate Paleontology (SVP) (SVP, 1995). The SVP, an international scientific organization of professional vertebrate paleontologists, has developed guidelines that outline acceptable professional practices in the conduct of paleontological resource assessments; these guidelines are the standard against which paleontological regulatory compliance programs are evaluated.

For undertakings that require compliance with regulations for the management of paleontological resources, SVP guidelines recommend having literature and museum archival reviews, and a field survey.

Geology and Stratigraphy

The geologic setting of San Francisco Bay, including the project area, is described in Section 3.13, Geology, Soils, and Seismicity. The vicinity of the project area has been developed over the years by artificially filling the waterfront and constructing various seawalls to enable construction of piers, buildings, and roadways. Numerous geotechnical borings have been drilled and sampled to evaluate subsurface conditions at the location of the Ferry Building, the Muni Metro Turnaround, piers, and potential commercial buildings. In general, the landward boundary of the project area is along the seawall. The waterside portion of the site is underlain by relatively soft recent deposits (Young Bay Mud) on the order of 100 feet thick, overlying a thin accumulation of Bay sediments (i.e., Merritt Sand) and Old Bay Mud at an approximate thickness of 60 feet. Bedrock of the Franciscan Assemblage is at a depth of approximately 250 feet below the mudline (bottom of Bay).

For the paleontological analysis, sensitivity ratings are presented of those underlying strata that could be encountered during project implementation. As proposed, the project would require the installation of piles though the Young Bay Mud and into the underlying Merritt Sand and Old Bay Mud. No elements of the project would extend to the depth of the underlying bedrock. Therefore, the paleontological sensitivity of the Young Bay Mud, Merritt Sand, and Old Bay Mud are relevant for the project. The paleontological sensitivity ratings of the strata found to be in the project vicinity are based on the available literature, and on the known geologic process that led to their formation.

Young Bay Mud. Numerous Late Pleistocene and Holocene fossils have been reported from sediments referred to as San Antonio Formations in the San Francisco area, the marine facies of which appear to be represented by the Young Bay Mud. Fossils recovered from such sediments at sites in the area around San Francisco Bay include microfossils useful in paleoenvironmental reconstructions (radiolaria, foraminifera, sponge spicules, coccoliths, diatoms, dinoflagellates, pollen, and spores) (Atwater et al., 1977; McGann et al., n.d.; Sloan, 1992). Schlocker has also reported fossil plant remains from sediments he referred to as "Bay mud and clay" (Schlocker, 1974), while Bonilla reported fossil shells and plant remains from what he termed "Bay Mud" (Bonilla, 1971). More recently, Fisk recovered abundant fossil mollusk shells from cores retrieved from Young Bay Mud at depths of approximately 20 and 25 feet (Fisk, 2004).

The record search revealed that sediments commonly referred to as Young Bay Mud have produced numerous significant plant, invertebrate, and vertebrate fossils at numerous previously recorded fossil sites. Several previously recorded fossil localities are recorded in the San Francisco waterfront, including sites containing vertebrate fossils within the limits of the Islais Creek estuary. In addition, abundant fossil mollusks were observed in such sediments by Fisk in the Potrero Point vicinity (Fisk, 2004). The presence of these previously recorded fossil sites in nearby Late Pleistocene to early Holocene sediments suggests that Young Bay Mud in the project area is potentially sensitive for paleontological resources.

Merritt Sand and Old Bay Mud. These Late Pleistocene sediments date to the Last Interglaciation (circa 128,000 and 75,000 years ago) during which, for part of this time, sea level was actually higher than the present by 6.5 to 10 feet. Significant marine and terrestrial fossils have been previously recovered from these strata, including by Rodda and Baghai who reported bones and teeth of mammoth and extinct bison from sands and clays unconformably overlying the Franciscan Complex in downtown San Francisco (Rodda and Baghai, 1993). Marine facies, including some units identified as the Merritt Sand, have produced marine megafossils, marine and nonmarine diatoms, and sponge spicules (Schlocker, 1974). Fossil mollusk shell fragments were recovered from a geotechnical sample in what Fisk identified as Merritt Sand (Fisk, 2004). This geotechnical boring was from the Potrero Point vicinity, approximately 2.6 miles south of the project area. In addition, Radbruch and Schlocker reported the recovery of fossils from borings in the Islais Creek area (approximately 3.6 miles south of project area), in sediment identified as Old Bay Mud. Radbruch and Schlocker also reported the discovery of fossil plants and mollusk fossils in an excavation at the Southeast Sewage Treatment Plant (now known as the Southeast Water Pollution Control Plant (Radbruch and Schlocker, 1958).

The record search has revealed that the Merritt Sand and Old Bay Mud have produced significant fossils at numerous previously recorded fossil localities in the Bay Area, including in a geotechnical borehole south of the project area near Potrero Point (Fisk, 2004). The presence of these fossil sites suggests that Merritt Sand and Old Bay Mud in project area are potentially sensitive for paleontological resources.

Regulatory Setting

Cultural resources are defined as buildings, sites, structures, or objects, each of which may have historical, architectural, archaeological, cultural, or scientific importance. Numerous laws, regulations, and statutes, on both the federal and state levels, seek to protect and target the management of cultural resources.

Federal

Historic Sites Act (1935)

The Historic Sites Act, regulated at 16 United States Code (USC) 461 et seq., declares a national policy to preserve historic sites, buildings, antiquities, and objects of national significance, including those located on refuges. The Historic Sites Act provides procedures for designation, acquisition, administration, and protection of such sites.

National Historic Preservation Act, as Amended (1966)

The NHPA declares federal policy to protect historic sites and values in cooperation with other nations, states, and local governments. The NHPA establishes a program of grants to assist states for historic preservation activities. Subsequent amendments designated the SHPO as the individual responsible for administering state-level programs. The act also created the President's Advisory Council on Historic Preservation (ACHP). Federal agencies are required to consider the effects of their undertakings on historic resources, and to give the ACHP a reasonable opportunity to comment on those undertakings. A lead federal agency will be responsible for project compliance with Section 106 of the NHPA and its implementing regulations, set forth by the ACHP at 36 Code of Federal Regulations (CFR) 800.

National Environmental Policy Act, as Amended (1969)

Under the National Environmental Policy Act (NEPA), 42 USC Sections 4321-4327, federal agencies are required to consider potential environmental impacts and appropriate mitigation measures for projects with federal involvement. The Council on Environmental Quality NEPA regulations state that an environmental impact statement (EIS) shall include, among other analysis topics, discussions of historic and cultural resources (40 CFR 1502.16). In addition, FTA NEPA regulations require a Final EIS that

documents compliance with all applicable laws (23 CFR 771.125[a][1]). This regulation is complemented by the Section 106 NHPA regulations, which encourage agencies to coordinate Section 106 compliance with the NEPA process, and to meet the purposes and requirements of both statutes in a timely and efficient manner (36 CFR 800.8).

Archaeological and Historic Preservation Act (1974)

Under 16 USC 469-469c, the Archaeological and Historic Preservation Act requires federal agencies to provide notice to the Secretary of the Interior of any dam constructions or alterations of terrain and, if archaeological resources are found, for recovery or salvage of them. The law applies to any agency whenever it receives information that a direct or federally assisted activity could cause irreparable harm to prehistoric, historic, or archaeological data. Up to 1 percent of project funds could be used to pay for salvage work. The NHPA also authorized additional funding to be availed for this purpose.

American Indian Religious Freedom Act (1978)

The American Indian Religious Freedom Act, 42 USC 1996, et seq., regulated under 43 CFR 7, has been established to protect religious practices, ethnic heritage sites, and land uses of Native Americans. It directs various federal departments, agencies, and other instrumentalities responsible for administering relevant laws to evaluate their policies and procedures in consultation with Native American traditional religious leaders, to determine changes necessary to protect and preserve Native American cultural and religious practices.

Archaeological Resources Protection Act (ARPA) (1979)

ARPA supplements the provisions of the Antiquities Act of 1906, and declares it illegal to excavate or remove from federal or Native American lands any archaeological resources without a permit from the land manager (or federal agency with jurisdiction over those lands). ARPA would also apply to underwater cultural resources if they are found in locations under federal jurisdiction.

Submerged Lands Act (1953)

This act is largely superseded by the Abandoned Shipwreck Act, but has been used by states to protect abandoned historic shipwrecks by citing various state-level historic preservation laws. The Submerged Lands Act established state jurisdiction over offshore lands within 3 miles of shore (or 3 marine leagues for Texas and the Gulf coast of Florida).

Abandoned Shipwreck Act (1987)

The Abandoned Shipwreck Act, 43 USC 2101–2106, is a federal-level legislative act, but it does protect shipwrecks found in state waters. The Abandoned Shipwreck Act also states that the laws of salvage and finds do not apply to abandoned shipwrecks protected by the act. Under the Abandoned Shipwreck Act, the United States asserts title to abandoned shipwrecks in state waters that are either:

- Embedded in state-submerged lands;
- Embedded in the coralline formations protected by a state on submerged lands; or
- Resting on state-submerged lands and are either included in or determined eligible for the NRHP.

The Abandoned Shipwreck Act also has a provision for the simultaneous transfer, by the federal government, of title for those abandoned shipwrecks to the state(s) in whose waters the wrecks are located.

State

CEQA and CEQA Guidelines

In California, cultural resources include archaeological and historical objects, sites and districts, historic buildings and structures, cultural landscapes, and sites and resources of concern to local Native American and other ethnic groups. CEQA Section 21084.1 defines a historic resource under CEQA, and the level of change that would cause a significant effect on a historic resource. Compliance procedures are set forth in CEQA Guidelines Sections 15064.5 and 15126.4.

At the state level, consideration of significance as an "important archaeological resource" is measured by cultural resource provisions considered under CEQA Section 21084.1 and CEQA Guidelines Sections 15064.5 and 15126.4(b), and the draft criteria regarding resource eligibility to the CRHR.

Section 15064.5 of the CEQA Guidelines also assigns special importance to human remains and specifies procedures to be used when Native American remains are discovered. These procedures are detailed under California Public Resources Code (PRC) Section 5097.98.

California Native American Graves Protection and Repatriation Act (2001)

In the California Health and Safety Code, Division 7, Part 2, Chapter 5 (Sections 8010-8030)[5], broad provisions are made for the protection of Native American cultural resources. The act sets the state policy to ensure that all California Native American human remains and cultural items are treated with due respect and dignity.

California Public Resources Code, Section 5020

This California code created the California Historic Landmarks Committee in 1939, and authorizes the Department of Parks and Recreation to designate Registered Historical Landmarks and Registered Points of Historical Interest.

California Public Resources Code, Section 5097.9

Procedures are detailed under PRC Section 5097.9, for actions taken whenever Native American remains are discovered. No public agency, and no private party using or occupying public property, or operating on public property, under a public license, permit, grant, lease, or contract made on or after July 1, 1977, shall in any manner whatsoever interfere with the free expression or exercise of Native American religion as provided in the United States Constitution and the California Constitution; nor shall any such agency or party cause severe or irreparable damage to any Native American sanctified cemetery, place of worship, religious or ceremonial site, or sacred shrine on public property, except on a clear and convincing showing that the public interest and necessity so require.

California Public Resources Code, Section 7050.5

Every person who knowingly mutilates or disinters, wantonly disturbs, or willfully removes any human remains in or from any location other than a dedicated cemetery without authority of law is guilty of a misdemeanor, except as provided in Section 5097.99 of the PRC. In the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site, or any nearby area reasonably suspected to overlie adjacent remains, until the coroner of the county in which the human remains are discovered has determined the remains to

[5] Commonly known and cited as the California Native American Graves Protection and Repatriation Act of 2001.

be archaeological. If the coroner determines that the remains are not subject to his or her authority, and if the coroner recognizes the human remains to be those of a Native American or has reason to believe that they are those of a Native American, he or she shall contact the NAHC by telephone within 24 hours.

California Public Resources Code, Section 7051

Every person who removes any part of any human remains from any place where it has been interred, or from any place where it is deposited while awaiting interment or cremation, with intent to sell it or to dissect it, without authority of law, or written permission of the person or persons having the right to control the remains under Section 7100, or with malice or wantonness, has committed a public offense that is punishable by imprisonment in the state prison.

Administrative Code, Title 14, Section 4307

Under this state preservation law, no person shall remove, injure, deface, or destroy any object of paleontological, archaeological, or historical interest or value.

Local

San Francisco Historic Preservation Commission and Planning Code, Articles 10 and 11.

The Office of Historic Preservation has included the City and County of San Francisco on its list of Certified Local Governments, which means that San Francisco has an approved historic preservation ordinance, Historic Preservation Commission, and other formal processes related to historic preservation and cultural resources management. Article 10 describes procedures regarding the preservation of sites and areas of special character or special historical, architectural, or aesthetic interest or value, designated as City Landmarks and included within locally designated historic districts. Article 11 of the Planning Code designated six downtown conservation districts. The Ferry Building is designated as a landmark pursuant to Article 10 of the Planning Code.

Port of San Francisco Review Procedures for Alterations to Historic Resources Port Commission Resolution No. 04-89.

Port Commission Resolution 04-89 requires that all work in the Embarcadero Historic District be consistent with the Secretary of the Interior's Standards for the Treatment of Historic Properties. The Waterfront Design Advisory Committee is responsible for design and architectural review of major Port projects, and also reviews projects for consistency with the Secretary of the Interior's Standards for Historic Rehabilitation for alterations to designated historic resources and projects within historic districts. This design review process would also be coordinated with other agencies with jurisdiction over and expertise in areas along the waterfront, including the Bay Conservation and Development Commission and, given the historic resources within the project area, the San Francisco Historic Preservation Commission. The public is invited to participate in the design review process.

Significance Criteria for Evaluation of Cultural Resources

Federal Significance Criteria

The four evaluation criteria to determine a resource's eligibility to the NRHP, in accordance with the regulations outlined in 36 CFR 800, are identified at 36 CFR 60.4. These evaluation criteria, listed below, are used to help determine what properties should be considered for protection from destruction or impairment resulting from project-related activities (36 CFR 60.2).

The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:

(a) Resources that are associated with events that have made a significant contribution to the broad patterns of our history; or

(b) Resources that are associated with the lives of persons significant in our past; or

(c) Resources that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

(d) Resources that have yielded, or may be likely to yield, information important in prehistory or history (36 CFR 60.4).

A property may also possess traditional cultural significance that may make it eligible for inclusion in the NRHP. "Traditional" in this context refers to those beliefs, customs, and practices of a living community of people that have been passed down through the generations, usually orally or through practice. The traditional cultural significance of a historic property, then, is derived from the role the property plays in a community's historically rooted beliefs, customs, and practices. Examples of properties possessing such significance include:

- a location associated with the traditional beliefs of a Native American group about its origins, its cultural history, or the nature of the world;
- a rural community whose organization; buildings and structures; or patterns of land use reflect the cultural traditions valued by its long-term residents;
- an urban neighborhood that is the traditional home of a particular cultural group, and that reflects its beliefs and practices;
- a location where Native American religious practitioners have historically gone, and are known or thought to go today, to perform ceremonial activities in accordance with traditional cultural rules of practice; and
- a location where a community has traditionally carried out economic, artistic, or other cultural practices important in maintaining its historic identity.

A traditional cultural property, then, can be defined generally as one that is eligible for inclusion in the NRHP because of its association with cultural practices or beliefs of a living community that: (a) are rooted in that community's history; and (b) are important in maintaining the continuing cultural identity of the community.

State Significance Criteria

In considering impact significance under CEQA, the significance of the resource itself must first be determined. At the state level, consideration of significance as a "historical resource" is measured by cultural resource provisions considered under CEQA Sections 15064.5 and 15126.4, and the criteria regarding resource eligibility to the CRHR.

Generally, under CEQA, a historical resource (these include built-environment historic and prehistoric archaeological resources) is considered significant if it meets the criteria for listing on the CRHR. These criteria are set forth in CEQA Section 15064.5, and defined as any resource that:

(a) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
(b) Is associated with lives of persons important in our past;
(c) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
(d) Has yielded, or may be likely to yield, information important in prehistory or history.

Section 15064.5 of CEQA also assigns special importance to human remains and specifies procedures to be used when Native American remains are discovered. These procedures are detailed under California PRC Section 5097.98.

"Unique" archaeological resources are also considered under CEQA, as described under PRC 21083.2. A unique archaeological resource implies an archaeological artifact, object, or site about which it can be clearly demonstrated that—without merely adding to the current body of knowledge—there is a high probability that it meets one of the following criteria:

(a) The archaeological artifact, object, or site contains information needed to answer important scientific questions, and there is a demonstrable public interest in that information;
(b) The archaeological artifact, object, or site has a special and particular quality, such as being the oldest of its type or the best available example of its type; or
(c) The archaeological artifact, object, or site is directly associated with a scientifically recognized important prehistoric or historic event or person.

A nonunique archaeological resource indicates an archaeological artifact, object, or site that does not meet the above criteria. Impacts to nonunique archaeological resources and resources which do not qualify for listing on the CRHR receive no further consideration under CEQA.

Conformity of Federal and State Evaluation Criteria

The criteria for eligibility for the CRHR are very similar to those that qualify a property for the NRHP.

A property that is eligible for the NRHP is also eligible for the CRHR. All potential impacts to significant resources for projects where there is federal agency involvement must be assessed and addressed under the procedures of Section 106 of the NHPA, set forth at 36 CFR 800. All resources, with the exception of isolate artifacts and isolate features that appear to lack integrity or data potential, will be evaluated for significance.

3.8.3 Impact Evaluation

This impact evaluation assesses the potential for the project to affect the historic architectural properties and resources and archaeological resources identified in Section 3.8.2 under applicable federal and state laws. The evaluation complies with Section 106 of the NHPA of 1966, as amended, by applying the Criteria of Adverse Effect, set forth in Title 36 CFR, Part 800.5, and following the guidelines for documentation in 36 CFR 800.11, as they pertain to historic properties and archaeological resources in the project APE. The analysis also satisfies the CEQA requirement that California public agencies identify the significant environmental impacts of their actions as they pertain to historical resources. The CEQA assessment has been prepared in compliance with Section 15064.5(a)-(b) of the CEQA Guidelines, using

the criteria outlined in Section 5024.1 of the California PRC. The impacts analysis includes recommendations to avoid, minimize, or mitigate the identified impacts.

The criteria for determining an adverse effect under Section 106 are applied to assess what impacts an undertaking would have on the historic integrity of a historic property, and how an undertaking would affect those features of a historic property that contribute to its eligibility for listing in the NRHP. Similarly, the criteria of significant impacts to historic resources under CEQA are applied to assess a project's impacts on the historic integrity of a historical resource, and whether the project impacts would materially impair the historical significance of the resource. Under both sets of criteria, effects can be direct, indirect, and cumulative. Direct effects include such actions as physical destruction or damage. Indirect effects include the introduction of visual, auditory, or vibration impacts, as well as neglect of a historic property. Cumulative effects are the impacts of the project taken into account with known past or present projects, along with foreseeable future projects.

Definition of Effect and Criteria of Adverse Effect under Section 106

Section 106 regulations state that if there are historic properties in the APE that may be affected by a federal undertaking, the agency official shall assess adverse effects, if any, in accordance with the Criteria of Adverse Effect defined in 36 CFR 800.5. The definition of *effect* in that section states: "*Effect* means alteration to the characteristics of a historic property qualifying it for inclusion in or eligibility for the National Register." An *adverse effect* occurs "when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association . . . Adverse effects may include reasonably foreseeable effects caused by the undertaking that may occur later in time, be farther removed in distance, or be cumulative."[6] Examples of adverse effects may include, but are not limited to, the following (36 CFR 800.5[a][2])[i through vii]:

i. Physical destruction of or damage to all or part of the property;

ii. Alteration of a property, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation, and provision of handicapped access, that is not consistent with the *Secretary's Standards for the Treatment of Historic Properties* (36 CFR Part 68) and applicable guidelines;

iii. Removal of property from its historic location;

iv. Change of the character of the property's use or of physical features within the property's setting that contributes to its historic significance;

v. Introduction of visual, atmospheric, or audible elements that diminish the integrity of the property's significant historic features;

vi. Neglect of a property that causes its deterioration, except where such neglect and deterioration are recognized qualities of a property of religious and cultural significance to an Indian tribe or Native Hawaiian organization; and

vii. Transfer, lease, or sale of property out of federal ownership or control without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property's historic significance.

[6] 36 CFR 800.5(a)(1).

Definition and Criteria of Significant Impacts to Historic Resources under CEQA

The CEQA Guidelines, Title 14, California Code of Regulations, Chapter 3, beginning with Section 15064.5(b), define significant impacts for historical resources as follows:

(1) Substantial adverse change in the significance of an historical resource means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired.

(2) The significance of an historical resource is materially impaired when a project:

(A) Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the CRHR; or

(B) Demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources pursuant to Section 5020.1(k) of the PRC or its identification in an historical resources survey meeting the requirements of Section 5024.1(g) of the PRC, unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or

(C) Demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its eligibility for inclusion in the CRHR as determined by a lead agency for purposes of CEQA.

Therefore, the analysis of impacts to historic architectural and archaeological resources considered whether the project would result in:

- A substantial adverse change in the significance of an archaeological resource (prehistoric or historic) that is either listed or eligible for listing on the NRHP, the CRHR, a local register of historic resources, or is considered a unique archaeological resource;
- Disturbance of any human remains (prehistoric or historic), including those interred outside of formal cemeteries; or
- A substantial adverse change in the significance of an historic architectural resource that is either listed or eligible for listing on the NRHP, the CRHR, or a local register of historic resources.

Paleontological Resources

Paleontological resources, or fossils, have not been previously identified in the project area. However, the Young Bay Mud, Merritt Sand, and Old Bay Mud in project area are potentially sensitive for paleontological resources.

Based on the details of project construction, this section provides an assessment of the potential for the project to impact significant paleontological resources. The analysis is conducted consistent with the standards and guidelines recommended for the assessment and mitigation of impacts to paleontological resources recommended by the Society of Vertebrate Paleontology (SVP, 1995).

Therefore, the analysis of impacts to paleontological resources considers whether the project would result in disturbance or destruction of a sensitive and/or unique paleontological resource or site.

Direct Impacts

Those impacts (operational as well as construction-related) resulting in the disturbance or destruction of a cultural or paleontological resource would be considered a direct impact, because the effect would be permanent.

Impact 3.8-1: Substantial Adverse Change to NRHP and/or CRHR Listed, or Eligible to Be Listed, or Unique Archaeological Resources

No Action Alternative

Under the No Action Alternative, no modifications would be made to the existing Downtown San Francisco Ferry Terminal (Ferry Terminal) facilities to accommodate new or existing WETA services. Therefore, the No Action Alternative would have no effect or impact to NRHP and/or CRHR Listed, or Eligible to be Listed, or Unique Archaeological Resources.

Action Alternative

Implementation of the proposed project would include activities that would disturb the sediments in the project area, potentially affecting archaeological resources in the Archaeological APE. Sediment-disturbing activities would include initial dredging during construction; periodic maintenance dredging; pile demolition and removal; and pile installation. There are no recorded archaeological resources—NRHP and/or CRHR listed or eligible, unique, or otherwise—in the Archaeological APE for the project. Therefore, the proposed project would have no impact on known archaeological resources.

Because dredging and other disturbances have occurred in the Archaeological APE historically, and considering that the previous archaeological investigations in the immediate vicinity did not identify any resources, it is unlikely that previously unidentified archaeological resources are present in the Archaeological APE. However, there remains the potential that previously unidentified archaeological materials could be inadvertently uncovered by project activities. Such inadvertently discovered archaeological sites could represent NRHP and/or CRHR eligible or unique archaeological resources, and their disturbance could adversely change their condition. Therefore, the inadvertent discovery of archaeological materials represents a potential project impact. Implementation of Mitigation Measure CUL-1, Inadvertent Discovery Measures, would reduce potential impacts to archaeological material by identifying the procedures to be followed in the event that archaeological resources are exposed during project implementation.

Pursuant to Section 106 of the NHPA, FTA concluded that this undertaking would have no effect on archaeological resources. SHPO concurred with this determination on April 15, 2013 (refer to Appendix D).

NEPA Determination. The inadvertent discovery of archaeological materials during project activities represents a potential adverse impact; however; with implementation of Mitigation Measure CUL-1, the potential for impacts would be reduced and would not be adverse.

CEQA Determination. The inadvertent discovery of archaeological materials during project activities represents a potential project impact; however; implementation of Mitigation Measure CUL-1 would reduce the project's potential to result in impacts to archaeological resources to a less-than-significant level.

Impact 3.8-2: Disturbance of Human Remains, Including those Interred Outside of a Formal Cemetery

No Action Alternative

Under the No Action Alternative, no modifications would be made to the existing Ferry Terminal facilities to accommodate new or existing WETA services. Therefore, the No Action Alternative would have no effect or impact to human remains, including those interred outside of formal cemeteries.

Action Alternative

Implementation of the proposed project includes sediment-disturbing activities, which have the potential to disturb human remains interred outside of formal cemeteries. There are no known cemeteries—formal or otherwise—or other evidence of human internment in the Archaeological APE for the project. Although it is unlikely, given the repeated dredging and other disturbances that have occurred in the sediments in the Archaeological APE, there remains the potential that previously unidentified human remains could be inadvertently uncovered with project implementation. Such disturbance of human remains represents a potential project impact. Implementation of Mitigation Measure CUL-1, Inadvertent Discovery Measures, and Mitigation Measure CUL-2, Treatment of Human Remains, would reduce potential impacts due to disturbance of human remains, by identifying the procedures to be followed in the event that human remains are inadvertently exposed during project implementation.

NEPA Determination. The inadvertent disturbance of human remains during construction represents a potential adverse impact; however, with implementation of Mitigation Measures CUL-1 and CUL-2, the potential for impacts would be reduced and would not be adverse.

CEQA Determination. The inadvertent disturbance of human remains during construction represents a potential project impact; however, implementation of Mitigation Measures CUL-1 and CUL-2 would reduce the project's potential to result in impacts to human remains to a less-than-significant level.

Impact 3.8-3: Cause a Direct Adverse Effect or Impact to Historic Properties or Resources

No Action Alternative

Under the No Action Alternative, no modifications would be made to the existing Ferry Terminal facilities to accommodate new or existing WETA services. Therefore, the No Action Alternative would have no effect or impact on historical properties or resources.

Action Alternative

There is one element of the proposed project that would directly affect historic properties or resources. This element involves the potential replacement of wood fendering along the southern edge of Pier 1, as indicated on Figure 2-2.

As described in Section 2.3.2, the existing fendering along the southern edge of Pier 1 in the North Basin could be removed and replaced. This would require the removal of 33 wood piles along the southern side of Pier 1 (see Figure 3.8-6), which would be replaced with 330 linear feet of "chock block" fendering, with 33 new 14-inch-diameter wood piles. Pier 1 is individually listed on the National Register, and contributes to the Embarcadero Historic District and to the Central Embarcadero Piers Historic District, both of which partially overlap the Focused Architectural APE for this project. The pilings that are subject to removal have been identified as original to the building, and contribute to the significance of the property (Page & Turnbull, 2002). Their removal, therefore, has the potential to cause an adverse

effect/significant impact to the historic property or resource. WETA has not yet determined whether replacement of the fendering would be required to safely operate vessels at the new Gate A. During the Final design of the project, the existing fendering along the southern edge of Pier 1 would be inspected to determine whether replacement is necessary. In the event that it is determined that the fendering would require replacement, Mitigation Measure CUL-3, Replacement in Accordance with Secretary of the Interior's Standards for Rehabilitation, would be implemented. This measure requires that replacement of the fendering be constructed in a manner consistent with the *Secretary of the Interior's Standards for the Treatment of Historic Properties, Standards for Rehabilitation* (NPS, 2001). Implementation of this mitigation measure, should the fendering require replacement, would reduce potential adverse effects; therefore, project effects would not be adverse.

All other construction is occurring outside the boundaries of the historic properties or resources that are in or partially in the Focused Architectural APE, except where the project would connect to the historic bulkhead wharf. The boundaries of the Embarcadero Historic District and the Central Embarcadero Piers Historic District encompass only the elements that contribute to the districts, and generally exclude noncontributing features. In the project area, these noncontributing features include Pier 2 and the Ferry Plaza, and portions of the bulkhead wharf built after the end of the two districts' respective periods of significance. The boundaries of the three buildings that are individually listed in the NRHP and CRHR (the Ferry Building, the Agriculture Building, and Pier 1) are also defined by the footprint of each building (which in the case of Pier 1 also includes the extent of the pier substructure) (Figure 3.8-3). The construction zone encompasses areas currently occupied by Pier 2, as well as noncontributing portions of the bulkhead wharf. As described in Table 2-2, the proposed project would include resurfacing an area of decking immediately west of the existing water basin between the Ferry Building and the Agriculture Building. Some of this pavement would be situated atop a contributing section of bulkhead wharf west of the line between the west-facing façades of the Ferry Building and the Agriculture Building, as depicted on Figure 3.8-5. The existing surfacing in this area is nonhistoric; it was installed after the end of the period of significance, and does not contribute to the significance of the resource (Corbett et al., 2006, Section 7:57). Because these construction or demolition activities would not—with the aforementioned exception of the possible fendering removal at Pier 1—damage, destroy, or otherwise alter, in whole or in part, contributing or individually eligible historic properties or resources, the project would not cause a direct adverse effect or significant impact to historic properties or resources.

There are, however, several historic properties and resources very near the planned construction activities. Because inadvertent damage to these historic properties or resources would be adverse and potentially significant, the undertaking would apply measures to avoid and minimize this effect. Implementation of Mitigation Measure CUL-4 requires demarcation of the construction zone, to reduce the potential for inadvertent damage; and implementation of a response and repair plan, should any inadvertent damage occur during construction. This measure would avoid and minimize potential adverse effects; therefore, project effects would not be adverse.

None of the historic properties are federal property, and the project does not constitute the transfer, lease, or sale of property out of federal ownership. Therefore, the undertaking would not constitute an adverse effect under this criterion, nor would it cause a significant impact. Finally, the project would not cause neglect to or change the use or location of a historic property, and so would not cause an adverse effect or a significant impact.

Pursuant to Section 106 of the NHPA, FTA concluded that this undertaking, with the implementation of proposed mitigation measures, would have no adverse effect on historic properties (also refer to Impact 3.8-5). SHPO concurred with this determination on April 15, 2013 (refer to Appendix D).

Source: JRP Historical Consulting, LLC, 2011

PILE FENDERING
ON THE SOUTHERN SIDE OF PIER 1

Downtown San Francisco
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28067812 San Francisco, California

FIGURE 3.8-6

NEPA Determination. Should it be determined that the fendering along Pier 1 requires replacement, the project could directly affect historic properties or resources in the Focused Architectural APE. Implementation of Mitigation Measures CUL-3 and CUL-4 require application of measures during construction to avoid inadvertent damage; implementation of a response and repair plan, should any inadvertent damage occur during construction; and replacement of the fendering along Pier 1, in a manner consistent with the *Secretary of the Interior's Standards for the Treatment of Historic Properties, Standards for Rehabilitation* (NPS, 2001). With implementation of these mitigation measures, impacts would be reduced and would result in no adverse effect.

CEQA Determination. Direct impacts to historic properties or resources in the Focused Architectural APE would be potentially significant, should it be determined that the fendering along Pier 1 requires replacement. Implementation of Mitigation Measures CUL-3 and CUL-4 require application of measures during construction to avoid inadvertent damage; implementation of a response and repair plan, should any inadvertent damage occur during construction; and replacement of the fendering along Pier 1, in a manner consistent with the *Secretary of the Interior's Standards for the Treatment of Historic Properties, Standards for Rehabilitation* (NPS, 2001). These measures would reduce potential impacts to a less-than-significant level.

Impact 3.8-4: Adverse Effects to Unidentified Significant Paleontological Resources

No Action Alternative

Under the No Action Alternative, no modifications would be made to the existing Ferry Terminal facilities to accommodate new or expanded WETA services. Therefore, the No Action Alternative would have no impacts to paleontological resources.

Action Alternative

Implementation of the proposed project would include activities that would disturb the sediments in the project area, potentially affecting paleontological resources. Sediment-disturbing activities would include initial dredging during construction; periodic maintenance dredging; pile demolition and removal; and pile installation. No paleontological resources have been previously identified in the project area; however, there are previously recorded fossil sites nearby, and the project area is therefore considered potentially sensitive for paleontological resources. As proposed, the project would require the installation of piles though the Young Bay Mud and into the underlying Merritt Sand and Old Bay Mud. No elements of the project would extend to the depth of the underlying bedrock. Dredging would be less likely to impact paleontological resources, based on the limited depth of dredging (to 14 feet below mean lower low water), and because the area has been previously disturbed by historic dredging and vessel traffic. Implementation of Mitigation Measure CUL-5 would reduce potential impacts to unknown significant paleontological resources, by halting work within 50 feet of sediment-disturbing activities if buried paleontological resources are discovered during construction. A qualified paleontologist could then document the discovery as needed, evaluate the potential resource, assess the significance of the find, and determine how to mitigate the potentials effects, as necessary.

NEPA Determination. The project has the potential to adversely impact paleontological resources. With the implementation of Mitigation Measure CUL-5, the potential for impacts would be reduced and would not be adverse.

CEQA Determination. With implementation of proposed Mitigation Measure CUL-5, the project's potential to result in impacts to paleontological resources would be reduced to a less-than-significant level.

Indirect Impacts

Impact 3.8-5: Potential Indirect Effects of Visual or Noise and Vibration Elements on Historic Properties or Resources

No Action Alternative

Under the No Action Alternative, no modifications would be made to the existing Ferry Terminal facilities to accommodate new or expanded WETA services. Therefore, the No Action Alternative would have no indirect effects on historic properties or resources.

Action Alternative

The proposed project elements and project construction activities have the potential to indirectly impact historic properties in the Focused Architectural APE. The potential visual or noise and vibration effects are discussed below.

Visual

For additional information, also refer to Section 3.10, Aesthetics and Visual Resources.

The proposed project would introduce nonhistoric visual elements to the immediate surroundings of two listed historic districts, and to three individually listed buildings. However, the visual presence of these new project elements would not contrast with the scale or existing visual context of the area, and would be consistent with historic water transportation uses of area. Introduction of these new project features would not cause an adverse effect or significant impact to historic properties or resources, as discussed below.

The project area is between Pier 1 and Pier 14, The Embarcadero, and San Francisco Bay (see Figure 1-1). The Embarcadero extends for 3 miles along the waterfront, and includes a considerable variety of use and urban forms on the land side of the district. Generally, the waterfront side of the district comprises bulkhead buildings and piers, with maritime and other uses, parking areas, and open spaces. The new visual features of the proposed project (gates, berthing structures, weather canopies) would be consistent with the existing visual elements, and would be in or along the water basins between Piers 1 and 14. From the east, the project area can be seen from Treasure Island, Yerba Buena Island, and from the upper deck of the Bay Bridge, as well as from boats on San Francisco Bay. These views from the east encompass the piers and commercial structures on both sides of the Ferry Building, whose clock tower visibly punctuates the low San Francisco skyline. The views from this perspective are framed by the Agriculture Building and the Pier 14 breakwater on the south, and Pier 1 on the north, visually enclosing the North and South Basins that house the water transit gates (existing and proposed). From The Embarcadero on the west, views of the project site contain the visual elements of the Ferry Building, which serves as the visual focal point; the Agriculture Building; and Sinbad's Restaurant (on Pier 2). These buildings, as well as smaller-scale elements such as signs, lamp posts, streetscape decorative features, street trees, and pedestrian and transit facilities, obstruct some of the views to the water side of the project site.

The Port's design guidelines promote aesthetic planning criteria that guide the initial development of projects in a manner consistent with preservation of views and scenic resources. The preliminary design of the project improvements has been developed taking into consideration compatibility with the surrounding visual environment, as well as the nearby historic properties. Generally, the Focused Architectural APE is characterized by a mixture of historically significant bulkhead buildings and piers (the Ferry Building, the Agriculture Building, and Pier 1), modern buildings and structures (the Ferry Plaza, the ferry canopies and gates, and Sinbad's Restaurant), and parking areas and other open spaces.

The historic buildings are situated with their principal façades facing west onto The Embarcadero, while the modern buildings and structures are on the east or San Francisco Bay side of the Focused Architectural APE.

The new vertical project elements consist of gates, berthing structures, railings, lighting, and weather protection canopies. Most of the proposed new visual features included in the preliminary design would be placed on the San Francisco Bay side, in or along the water basins between Piers 1 and 14, outside of the boundaries of any listed historic district or individual building, in an area that is composed almost entirely of modern buildings and structures (built in the 1970s and later). The proposed project elements have been designed to be consistent with the scale, visual quality, and visual context of the existing landscape (see Figures 2-5 and 2-6), which is a built environment consisting of a mix of historic and modern elements. The proposed new gates (Gates A, F, and G) would be placed adjacent to the existing gates (Gates B and E), and would be similar in terms of height, scale, color, material, and texture (though the new gates would have slightly wider door openings). The float and access pier for proposed Gate A, in the North Basin, would be placed in the former location of the noncontributing Pier ½ (which has recently been demolished). Gates F and G, in the South Basin, would be constructed between existing Gate E and Pier 14.

Three weather protection canopies are also included in the project's preliminary design. The weather protection canopies would have a uniform look throughout the project area. They would be approximately 20 feet wide and 18 to 20 feet high; constructed of steel and glass; and could include photovoltaic cells (see Figure 3.8-7). One weather protection canopy would be constructed along the Gate A Access Pier. A similar canopy would be placed on the existing access pier along the north side of the Ferry Building. In the South Basin, an extension of the East Bayside Promenade—also topped with a photovoltaic canopy—would replace the existing, noncontributing Pier 2 and Sinbad's Restaurant.

Because of their low vertical profiles, light massing, and glass features, the visual impact of these project elements would be minimal, particularly when compared to the overall scale of the Ferry Building, Pier 1, and the Agriculture Building, as shown on Figures 3.8-7 through 3.8-10. The tallest features—the weather protection canopies and gates—would stand no higher than 20 feet, far below the heights of the adjacent buildings. The canopies, gates, and other project features would be visually subordinate to these historic properties. The placement and profiles of the gates and canopies are low enough that sightlines to the historic properties from various vantage points on the water side (such as at the ends of Piers 1 or Pier 14, or from the Ferry Plaza) would be either unimpeded or only partially obscured. Sightlines toward the principal façades of the Ferry Building, Agriculture Building, and Pier 1 from The Embarcadero would be unaffected. Additionally, although the proposed canopies, gates, piers, and decking would result in a slight net increase in visual bulk within the Focused Architectural APE, several of these project elements would replace existing visual clutter, namely noncontributing Pier 2 and Sinbad's Restaurant.

Additionally, the introduction of new visual elements would not adversely affect or significantly impact the historic properties or resources, because the surrounding setting and historic views—especially on the water side, where most of the project work would occur—have been fundamentally altered since the ends of their respective periods of significance, the latest of which was in 1952.[7] From a historical perspective, the water side of the project area bears little resemblance to the first half of the twentieth century, the period in which all of the listed properties achieved significance. In fact, this is the reason that the boundaries of the Embarcadero Historic District, Central Embarcadero Piers Historic District, and

[7] As shown in Table 3.8-3, the periods of significance for the Embarcadero Historic District and the Central Embarcadero Piers Historic District end in 1946 and 1952, respectively. The periods of significance of the individual buildings range from 1925 (Agriculture Building) to 1946 (Ferry Building).

individually listed buildings in the Focused Architectural APE were drawn to capture the elements that contribute to the historic significance, and to exclude the elements that do not.

As shown on Figure 3.8-11, the Bayside elements in the project area have been changed many times. First, many of the original ferry slips were removed; and then, in 1971, the Bay Area Rapid Transit (BART) Ferry Plaza Platform and Transition Structure were constructed as part of the Transbay Tube connection to the East Bay. This new platform (i.e., the Ferry Plaza) then became the location for the Golden Gate Ferry Terminal.

The effects of these nonhistoric developments on the historic setting surrounding the project area are substantial, as evidenced in a comparison of similar oblique aerial views from the 1950s and 2000s (Figure 3.8-12). The visual character that existed on the waterfront during the period of significance has been diminished with the removal or alteration of several major elements present at that time, and also through introduction of new elements. Gone are the distinctive, nose-in ferry slips that dominated the waterfront during the first half of the twentieth century, as are original Pier 14 bulkhead and wharf structure. In their places are several modern constructions: Gate B, which projects into the North Basin from the northeastern corner of the Ferry Building; the Ferry Plaza, including the Transition Structure, Golden Gate Ferry Terminal, and Gates C and D; Pier 2, which includes the Sinbad's Restaurant building and Gate E; and the modern Pier 14, a municipal pier and breakwater. Additionally, the eastern façade of the Ferry Building, which faces the waterfront, has been completely modified since its period of significance. Beginning in 1998 and completed in 2003, the Ferry Building was renovated and redeveloped as a mixed-use property. The project was certified by the National Park Service as being consistent with the Secretary of the Interior's Standards for the Treatment of Historic Properties. Although the renovation effort restored many original features and removed other historically unsympathetic materials and design elements, thereby returning the building to a closer approximation of its original appearance, it also added new elements to the eastern façade. Also, a new, 30-foot-wide wharf for pedestrian foot traffic was added to the foot of the Ferry Building on the eastern façade.

The introduction of the proposed small-scale, low-profile project elements would not cause an adverse effect to historic properties or resources because most of the proposed features would be placed on the San Francisco Bay side of the Architectural APE and outside of the boundaries of the historic properties. As discussed above, this is an area where modern development has already compromised the integrity of the historic setting. For these reasons, the project as proposed under the preliminary design would not cause an adverse effect to historic properties or resources in either the Architectural APE or Focused Architectural APE.

Assessment of the preliminary design does not indicate that an adverse effect is likely; however, a mitigation measure has been developed to ensure that the final design of project features directly adjacent to historic properties and not located within the water basins (i.e., weather protection canopies) would also avoid indirect adverse effects to adjacent to historic properties.

Mitigation Measure CUL-6 requires that final design of the weather protection canopies be developed in consultation with the Port Waterfront Advisory Design Committee and the San Francisco Historic Preservation Commission, and consistent with the *Secretary of the Interior's Standards for the Treatment of Historic Properties, Standards for Rehabilitation* (NPS, 2001). Although adverse impacts are not anticipated based on the preliminary design, implementation of Mitigation Measure CUL-6 would ensure that indirect adverse visual effects or significant impacts from the final design of the weather protection canopy element of the proposed project are avoided for all of the four historic properties in the Focused Architectural APE. The consultation and application of the Secretary of the Interior's Standards would ensure that historic integrity is retained, and that the properties would remain eligible for listing in the NRHP and CRHR; therefore, the project would have no adverse effect.

Weather Protection Canopy Design Concept, Gate B

Weather Protection Canopy Design Concept, Gates E, F and G

Source: ROMA Design Group, 2012

WEATHER PROTECTION CANOPY DESIGN CONCEPTS

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28067812 San Francisco, California

FIGURE 3.8-7

Oblique View North Basin, Showing Existing Conditions (facing east)

Simulated Oblique View of North Basin, Showing Proposed Gate A and Weather Protection Canopy Improvements (facing east)

Source: ROMA Design Group, 2012

Note: The America's Cup project has removed all of Pier 1/2 and will remove the building located on Pier 2 prior to project construction.

VIEWS OF NORTH BASIN TO THE EAST

Downtown San Francisco
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28067812 San Francisco, California

FIGURE 3.8-8

View of North Basin, Gate B, Showing Existing Conditions (facing southwest from Pier 1)

Source: JRP Historical Consulting, LLC, 2011

Simulated Oblique View of North Basin (facing southwest), Showing Proposed Gate A Improvements

Source: ROMA Design Group, 2012

Note: The America's Cup project has removed all of Pier 1/2 and will remove the building located on Pier 2 prior to project construction.

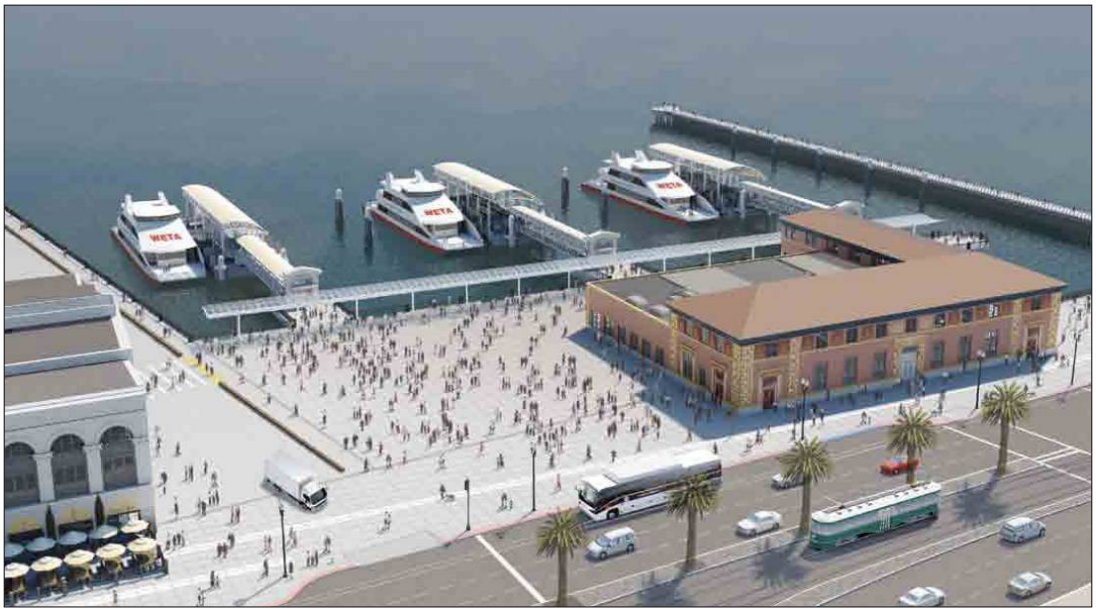
VIEWS OF NORTH BASIN TO THE SOUTHWEST

Downtown San Francisco
Ferry Terminal Expansion Project
28067812 San Francisco, California

FIGURE 3.8-9

View of South Basin, Showing Existing Conditions (facing southeast)

Source: ESRI ArcGIS Explorer imagery



Simulated Oblique View of South Basin, Showing Proposed Gates F and G Improvements (facing southeast)

Source: ROMA Design Group, 2012

Note: The America's Cup project has removed all of Pier 1/2 and will remove the building located on Pier 2 prior to project construction.

VIEWS OF THE SOUTH BASIN

Downtown San Francisco
Ferry Terminal Expansion Project
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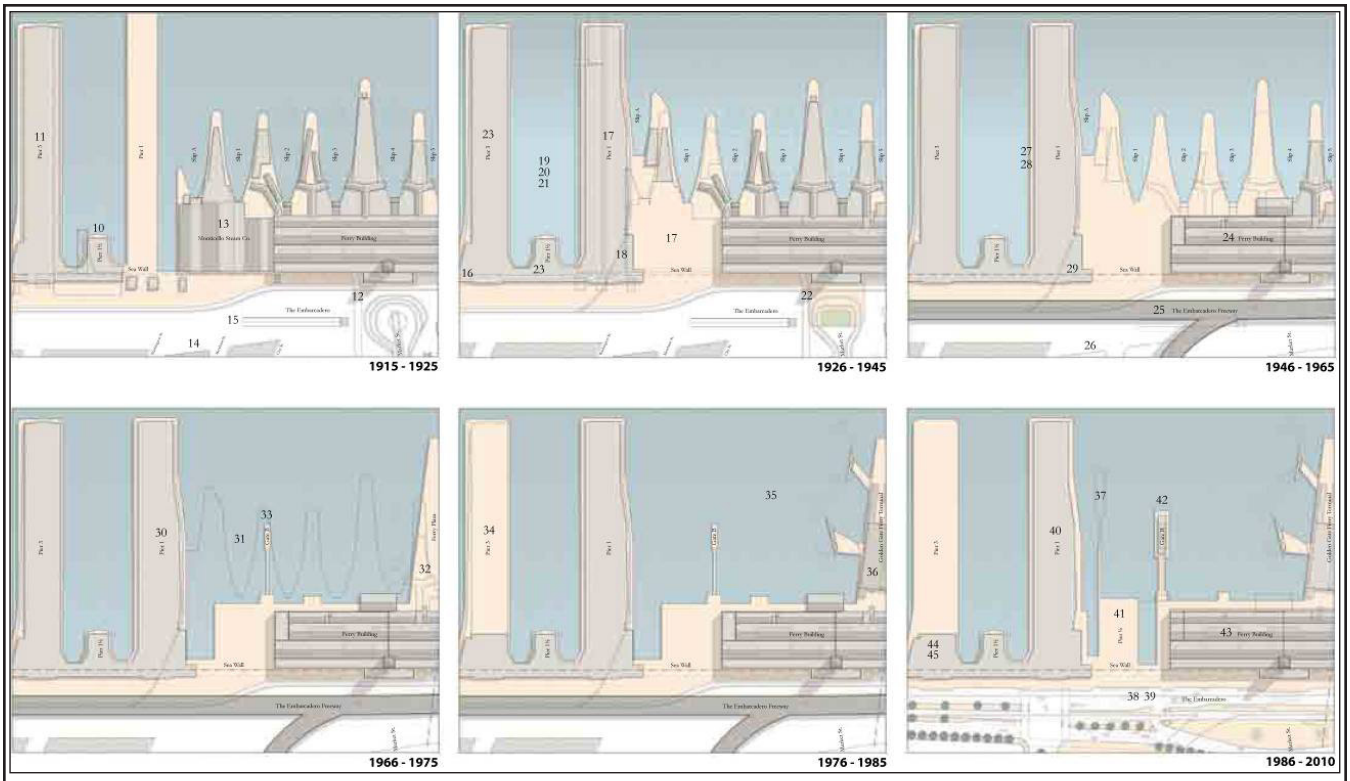
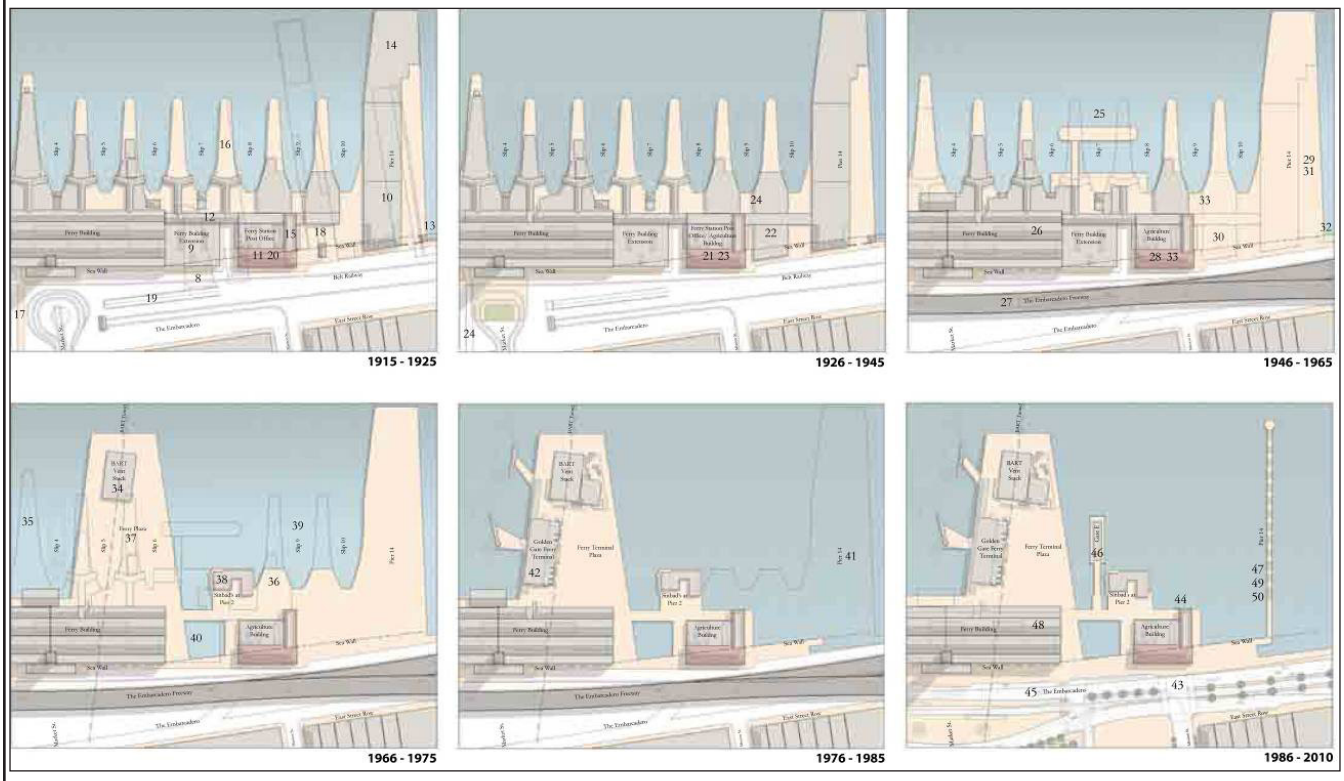
FIGURE 3.8-10



Physical Changes to the North Basin



Physical Changes to the South Basin

Source: ROMA Design Group, 2012

Note: The America's Cup project has removed all of Pier 1/2 and will remove the building located on Pier 2 prior to project construction.

PHYSICAL CHANGES 1915 TO 2010

Downtown San Francisco
Ferry Terminal Expansion Project
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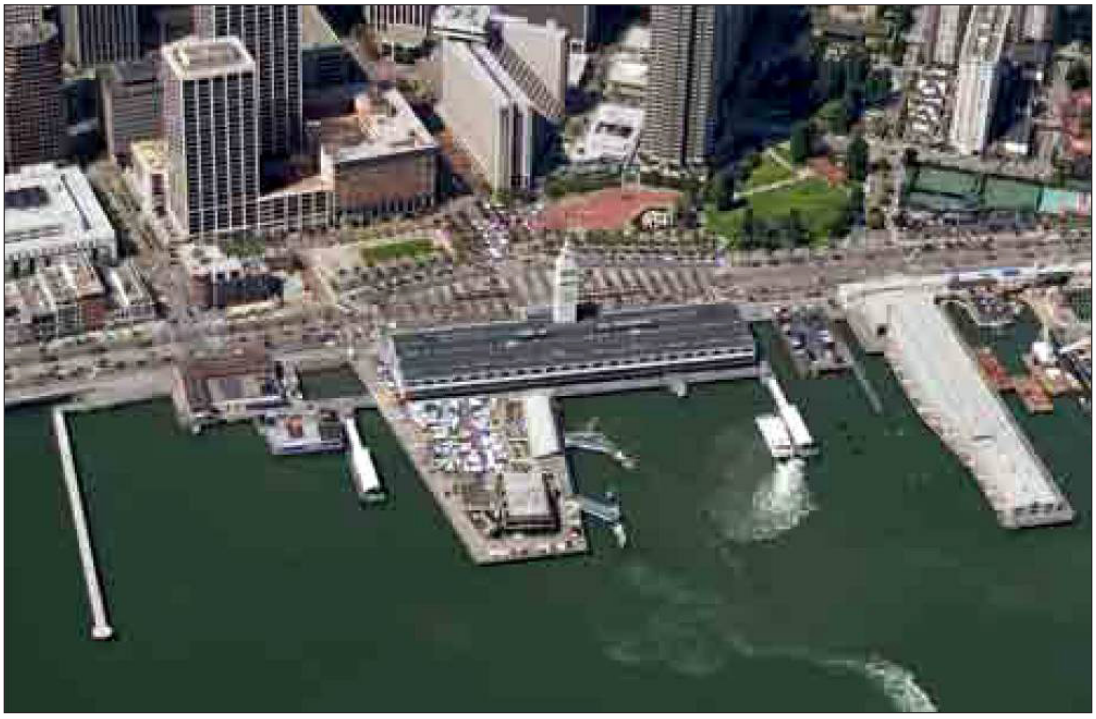
FIGURE 3.8-11

Oblique Aerial View of the Project Area (Ferry Building at Center) 1954

Source: San Francisco Public Library Historic Photograph Collection



Oblique Aerial View of the Project Area 2005

Source: ROMA Design Group, 2012

Note: The America's Cup project has removed all of Pier 1/2 and will remove the building located on Pier 2 prior to project construction.

OBLIQUE AERIAL VIEWS OF THE PROJECT AREA

Downtown San Francisco
Ferry Terminal Expansion Project
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FIGURE 3.8-12

Noise and Vibration

For additional details of the noise and vibration analysis, including the applicable analysis assumption, thresholds, and potential impacts, refer to Section 3.7, Noise and Vibration.

The analysis presented in Section 3.7 found that the potential noise and vibration impacts from project operations would not be expected to exceed thresholds that may cause indirect adverse effects or significant impacts to historic properties or resources. Therefore, noise and vibration impacts from project operation would not constitute an adverse effect or significant impact to historic properties or resources.

The noise caused by construction activities would not cause indirect adverse effects or significant impacts to historic properties or resources, because it would not permanently diminish their historic integrity.

The analysis did, however, find that groundborne vibration from project construction activities could exceed vibration thresholds for potential structure damage (Impact 3.7-5). Although groundborne vibration does not often reach the levels that can damage structures, the FTA cautions that care must be taken to avoid damage to old, fragile, or historically significant buildings, where high-vibration construction activities have the potential to cause damage. The four buildings and structures in the APE that have been identified as historic properties or resources are the Ferry Building, the Agriculture Building, Pier 1, and the seawall. The FTA provides consideration for buildings and structures in Chapter 12 of its *Transit Noise and Vibration Impact Assessment* (FTA, 2006). Applying the FTA Construction Vibration Damage Criteria for building types, each building and structure has been categorized as Building Category II: engineered concrete and masonry (no plaster) (FTA, 2006: Table 12-3).

Using FTA criteria for vibration levels that have the potential to cause structural damage to buildings (FTA, 2006: Table 12-3), and for vibration source levels for different types of construction equipment (e.g., pile drivers and bulldozers), the vibration analysis determined the distance from each building type where construction could exceed the FTA thresholds. The analysis concluded that vibration from proposed project construction activities has the potential to result in damage to the individual historic properties or resources, as follows:

- The Ferry Building (Building Category II) is 30 feet from the closest point of the construction zone. The analysis determined that when pile driving occurs within 73 feet (for impact pile driving) and 45 feet (for vibratory pile driving) of the Ferry Building, the pile driving has the potential to cause vibrations that would exceed the FTA thresholds of 0.3 peak particle velocity (PPV) for potential damage to the Category II building.

- Pier 1 (Building Category II) is 25 feet from the closest point of the construction zone. The analysis determined that when pile driving occurs within 73 feet (for impact pile driving) and 45 feet (for vibratory pile driving) of the Ferry Building, the pile driving has the potential to cause vibrations that would exceed the FTA thresholds for potential damage to the Category II building (0.3 PPV).

- The seawall (Building Category II) is in the construction zone. If any of the construction equipment listed in Table 3.7-13 is operated within the distances presented in Table 3.7-13, there is the potential to cause vibrations that would exceed the FTA thresholds for potential damage to the Category II structure (0.3 PPV).

- The Agriculture Building (Building Category II) is 5 feet from the closest point of the construction zone, and 17 feet from the nearest pile driving. If any of the construction equipment listed in Table 3.7-13—with the exception of a small bulldozer—is operated within the distances presented in

Table 3.7-13, there is the potential to cause vibrations that would exceed the FTA thresholds for potential damage to the Category II building (0.3 PPV).

Mitigation Measures NOISE-3 and NOISE-4, presented in Section 3.7, would reduce vibration from construction activities that could result in structural damage. These measures require that appropriate pile-driving techniques be selected, based on the distance from existing buildings; that vibration monitoring be conducted during construction; and that work be ceased and corrective measures or alternative construction methods be implemented should vibration monitoring indicate that the threshold would be exceeded. Therefore, implementation of Mitigation Measures NOISE-3 and NOISE-4 would avoid indirect adverse effects or significant impacts to each of the four historic properties or resources in the Focused Architectural APE.

Pursuant to Section 106 of the NHPA, FTA concluded that this undertaking, with the implementation of proposed mitigation measures, would have no adverse effect on historic properties. SHPO concurred with this determination on April 15, 2013 (refer to Appendix D).

NEPA Determination. There is potential for the design of the project's weather protection canopies to adversely affect the adjacent historic properties in the Focused Architectural APE. With implementation of Mitigation Measure CUL-6, indirect adverse visual effects from the final design of the weather protection canopy element of the proposed project would be avoided, and the project would result in no adverse effect.

There is a potential that vibration from construction could adversely affect the historic properties or resources in the Focused Architectural APE. These potential effects would be avoided by implementing Mitigation Measures NOISE-3 and NOISE-4. Therefore, the project would result in no adverse effect.

CEQA Determination. There is potential for the design of the project's weather protection canopies to significantly impact the adjacent historic properties in the Focused Architectural APE. With implementation of Mitigation Measure CUL-6, indirect adverse visual effects from the final design of the weather protection canopy element of the proposed project would be avoided, and project impacts would be less than significant.

There is a potential that vibration from construction could indirectly affect the historic properties or resources in the Focused Architectural APE. These potential effects would be avoided by implementing Mitigation Measures NOISE-3 and NOISE-4. Therefore, impacts would be less than significant with mitigation incorporated.

Construction Impacts

Given the nature of cultural and paleontological resources, there are no construction impacts. All construction impacts are considered direct or indirect, and permanent. As such, construction impacts are addressed above under Direct and Indirect Impacts.

Cumulative Impacts

Impact 3.8-6: Potential to Result in Cumulative Impacts on Archaeological Resources

Project implementation would not result in impacts to known NRHP- and/or CRHR-listed or eligible or unique archaeological resources. The project could result in the inadvertent discovery of a buried archaeological resource or buried human remains. The other projects shown in Table 3.1-1 would also have the potential to inadvertently uncover previously unidentified buried archaeological resources or buried human remains.

If previously undiscovered archaeological resources are inadvertently exposed during construction activities, an incremental effect to archaeological resources may occur. However, the proposed project and the other planned future projects in the project vicinity, including those in areas administered by the Port—which are subject to CEQA-level environmental review—would be required to consider mitigation for impacts to historical or unique archaeological resources. If these resources are properly evaluated and managed according to mitigation measures, no adverse cumulative impact to archaeological resources is expected to occur.

NEPA Determination. The project would not contribute to cumulative adverse impacts to archaeological resources.

CEQA Determination. Cumulative impacts to archaeological resources would be less than significant.

Impact 3.8-7. Potential to Result in Cumulative Impacts on Historic Properties

The proposed project has the potential to directly and indirectly affect historic properties or resources in the Focused Architectural APE. Should it be determined that the fendering along Pier 1, a historic resource, needs to be replaced, the proposed project could directly affect a historic property. In addition, the Focused Architectural APE includes four historic resources and two overlapping historic districts. Vibration from construction activities has the potential to affect the historic resources in the project area. In addition, the introduction of the new project elements has the potential to visually affect the adjacent historic buildings and historic districts. There are four other known ongoing and future projects that could have a potential to affect the historic properties and resources within the Focused Architectural APE as well: the America's Cup Project; Golden Gate Transit Ferry Terminal Improvements; BART Ferry Plaza Physical Barrier Project; and Agriculture Building Rehabilitation and Seismic Upgrades. The America's Cup Project components in the project area would result in the removal of existing deck and pile structures, and of the restaurant on Pier 2 (none of which are historic properties or historical resources). In addition, the America's Cup Project could involve other temporary uses, such as addition of boats and temporary berthing facilities along the northern waterfront. These changes are not anticipated to affect historic properties or resources. The Golden Gate Transit Ferry Terminal Improvements, which would occur at Golden Gate Transit's gates in the project area, are intended to upgrade accessibility. At this time, environmental review has not been initiated on this project, but the upgrade is anticipated to be minor in scope, and is not anticipated to result in significant changes in the area. The BART Ferry Plaza Physical Barrier Project involves the construction of surface security features around BART's facilities on the Ferry Plaza, which are not historic properties or within the boundaries of the historic district. The project is minor in scope and is not expected to result in significant visual changes to the area. The Agriculture Building Rehabilitation has also not initiated environmental review or design. At the time this project is defined, a detailed environmental review would evaluate both the project's potential to affect the historic properties and districts in the project area, and the project's potential cumulative impacts. The proposed project has been designed so as to not interfere with the future rehabilitation of the Agriculture Building.

In addition, several past, present, and reasonably foreseeable future projects have affected properties and buildings within the Embarcadero Historic District (such as the demolition of Pier 36, or the development of the Exploratorium and Cruise Terminal). Each of these projects would be required, pursuant to Port Resolution 04-89, to be designed to the Secretary of the Interior's Standards. As described in the environmental analysis for each project, the modifications have been and would be required to be designed so as not to result in substantial or adverse impacts to the Historic District and its integrity.

Because the other reasonably foreseeable projects are not anticipated to have substantial impacts to historic properties or resources, and because the proposed project's potential effects on historic resources would be less than significant and not adverse with the implementation of mitigation measures identified

for the project, no cumulative adverse impacts to historic properties or resources along San Francisco's waterfront are anticipated.

NEPA Determination. The project would not contribute to cumulative adverse impacts to historic properties.

CEQA Determination. Cumulative impacts to historic properties would be less than significant.

Impact 3.8-8: Potential to Result in Cumulative Impacts on Paleontological Resources

Implementation of the proposed project would include activities that would disturb the sediments in the project area, potentially affecting paleontological resources. No paleontological resources have been previously identified in the project area; however, the general vicinity of the project is considered potentially sensitive for paleontological resources, and therefore paleontological resources could be uncovered during construction. The other projects shown on Table 3.1-1 would also have the potential to inadvertently uncover previously unidentified paleontological resources.

If previously undiscovered paleontological resources are inadvertently exposed during construction activities, an incremental effect to may occur. However, the proposed project and the other planned future projects in the project vicinity, including those in areas administered by the Port—which are subject to CEQA-level environmental review—would be required to consider mitigation for impacts to paleontological resources. If these resources are properly evaluated and managed according to mitigation measures, no adverse cumulative impact to paleontological resources is expected to occur.

NEPA Determination. The project would not contribute to cumulative adverse impacts to paleontological resources.

CEQA Determination. Cumulative impacts to paleontological resources would be less than significant.

3.8.4 Mitigation Measures

Mitigation Measure CUL-1: Inadvertent Discovery Measures

To avoid any potential adverse effect on inadvertently discovered NRHP- and/or CRHR-eligible or unique archaeological resources as defined in CEQA Guidelines Section 15064.5(a)(c), WETA will distribute an archaeological resource "ALERT" sheet to the project prime contractor, and to any project subcontractor firms involved in soil/sediment disturbing activities in the project site. The "ALERT" sheet will contain sufficient information to allow contractor personnel to identify conditions that may indicate the presence of archaeological resources. Prior to undertaking any soil-disturbing activities (i.e., dredging, pile installation), each contractor is responsible for ensuring that the "ALERT" sheet is circulated to all field personnel, including machine operators, field crew, pile drivers, and supervisory personnel. Should there be any indication of an archaeological resource—including, but not limited to, encountering fragments of bone, stone tools, midden soils, structural remains, ship remnants, or historic refuse—during any soil-disturbing activity of the project, WETA will immediately suspend any soil-disturbing activities in the vicinity of the discovery.

In the event of such a discovery, WETA will retain the services of a qualified archaeological consultant. The archaeological consultant will advise WETA as to whether the discovery is an archaeological resource that retains sufficient integrity, and is of potential scientific/historical/cultural significance. If an archaeological resource is present, the archaeological consultant will identify and evaluate the archaeological resource. The archaeological consultant will make a recommendation to WETA as to what action or additional measures, if any, are warranted, including coordination with appropriate agencies.

Measures might include preservation in situ of the archaeological resource; an archaeological monitoring program; or an archaeological evaluation program. If an archaeological resource cannot be avoided by project activities, the archaeologist will prepare an Archaeological Evaluation Plan (AEP). The AEP will create a program to determine the potential of the expected resource to meet the CRHR criteria—particularly Criterion 4, the resource's potential to address important research questions identified in the AEP—and the archaeologist will submit this plan to WETA for approval. The archaeologist will then conduct an evaluation consistent with the WETA-approved AEP. The methods and findings of the evaluation will be presented in an Archaeological Evaluation and Effects Report, which will be submitted to WETA for review on completion.

Mitigation Measure CUL-2: Treatment of Human Remains

The treatment of human remains and associated or unassociated funerary objects discovered during any soil-disturbing activity will comply with applicable state laws. In the event the discovery is composed entirely of, or includes, human skeletal remains, in addition to implementation of Mitigation Measure CUL-1, Inadvertent Discovery Measures, construction activities will immediately cease and WETA's project representative will immediately contact the San Francisco County coroner to evaluate the remains, following the procedures and protocols set forth in Section 15064.5 (e)(1) of the CEQA Guidelines. If the coroner determines that the remains are Native American, WETA will contact the NAHC, who will appoint a Most Likely Descendant (MLD), in accordance with Health and Safety Code Section 7050.5, subdivision (c), and PRC 5097.98 (as amended by AB 2641). In accordance with PRC 5097.98, WETA and the Port (as landowner/administrator) will ensure that, according to generally accepted cultural or archaeological standards or practices, the immediate vicinity of the Native American human remains is not damaged or disturbed by further development activity until WETA and the Port have discussed and conferred with the MLD, as prescribed in this section (PRC 5097.98), regarding their recommendations, if applicable, taking into account the possibility of multiple human remains. WETA, the Port, and the MLD will make all reasonable efforts to develop an agreement for the treatment, with appropriate dignity, of human remains and associated or unassociated funerary objects (CEQA Guidelines Sec. 15064.5[d]). The agreement should take into consideration the appropriate excavation, removal, recordation, analysis, custodianship, curation, and final disposition of the human remains and associated or unassociated funerary objects. PRC allows 48 hours to reach agreement on these matters. If the MLD and the other parties do not agree on the reburial method, the project will follow Section 5097.98(b) of the PRC, which states, "the landowner or his or her authorized representative will re-inter the human remains and items associated with Native American burials with appropriate dignity on the property in a location not subject to further subsurface disturbance."

Mitigation Measure CUL-3: Replacement in Accordance with Secretary of the Interior's Standards for Rehabilitation

If replacement of the existing pile fendering attached to the southern side of Pier 1 is deemed necessary, the replacement work will be conducted in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties* (NPS, 2001), specifically adhering to the Standards for Rehabilitation. Project compliance with the Secretary of the Interior's Standards and applicable guidelines will ensure that Pier 1 retains sufficient historic integrity to convey its significance for listing in the NRHP and CRHR, therefore avoiding and minimizing the adverse effect or significant impact potentially caused by this undertaking.

When replacing the pile fendering on the southern side of the building, in-kind replacement materials will be used to the greatest extent feasible. The replacement timber pilings will have a diameter similar to that of the original pilings. The number of replacement pilings will match the number of pilings being removed (33), and the new pilings will be spaced similarly to the originals. The selection of replacement pilings should include input and review from an architectural historian who meets the Secretary of the Interior's Professional Qualification Standards (as defined in 36 CFR, Part 61). The project's compliance

with the Standards for Rehabilitation will result in Pier 1 retaining integrity of design, workmanship, materials, feeling, association, and location. Although the project will result overall in some diminished integrity of material, the elements that comprise the building's significant form, plan, and design, illustrating its important historic function and aesthetic value, will be retained; and the impact would be avoided and minimized.

Mitigation Measure CUL-4: Plan for Protection Against, and Response to, Inadvertent Damage

Protection and Monitoring to Avoid Effects. To avoid and minimize adverse effects that would inadvertently cause damage to historic properties during project construction activities, the project construction zone will be clearly delineated using orange construction fencing or other similar suitable materials, and designated as a restricted area. Mitigation Measure NOISE-3 would also help reduce this impact.

Response to and Repair of Inadvertent Damage. Should project actions cause inadvertent damage to historic properties, project work will cease, and the response plan prepared prior to construction for repair of damage will be implemented. The plan and response will include input and review from an architectural historian who meets the Secretary of the Interior's Professional Qualification Standards (as defined in 36 CFR, Part 61). Inadvertent damage to the historic properties resulting from the project will be repaired in accordance with the Secretary of the Interior's *Standards for Rehabilitation*. The response plan will include photographic documentation of the condition of the portions of historic properties prior to project implementation, to establish the baseline condition for assessing damage. Prior to implementation, WETA will provide the plans for any repairs to SHPO for review and comment, to ensure conformance with the Secretary of the Interior's *Standards for Rehabilitation*.

Mitigation Measure CUL-5: Stop Construction if Buried Paleontological Resources Are Discovered

In the event that paleontological resources are discovered during construction, sediment-disturbing activities within 50 feet of the find will be temporarily halted or diverted until the discovery is examined by a qualified paleontologist (in accordance with Society of Vertebrate Paleontology standards). The paleontologist will document the discovery as needed, evaluate the potential resource, and assess the significance of the find under the criteria set forth in CEQA Guidelines Section 15064.5. The paleontologist will notify the appropriate agencies to determine procedures that would be followed before construction is allowed to resume at the location of the find. If the project proponent determines that avoidance is not feasible, the paleontologist will prepare a salvage plan in accordance with the SVP and CEQA Guidelines for mitigating the effect of the project on the qualities that make the resource important. The plan will be submitted to WETA for review and approval prior to implementation.

Mitigation Measure CUL-6: Consultation with Local Agencies Regarding Final Design of Weather Protection Canopies and Secretary of the Interior's Standards for Rehabilitation

The final design of the weather protection canopies will be developed in consultation with the Port's Waterfront Design Advisory Committee and the San Francisco Historic Preservation Commission, and consistent with the *Secretary of the Interior's Standards for the Treatment of Historic Properties, Standards for Rehabilitation* (NPS, 2001). The basic scale and massing of these project features is described in Section 6.1, but the details of their appearance has not been finalized.

Mitigation Measure CUL-6 requires consultation regarding final design of weather protection canopies, and application of the Secretary of the Interior's Standards to the final design. Project compliance with the Secretary of the Interior's Standards and applicable guidelines will ensure that the weather protection canopy element of the proposed project would not adversely affect any of the historic properties in the

Architectural APE or Focused Architectural APE. The standards for rehabilitation recommend "designing new exterior additions to historic buildings or adjacent new construction which is compatible with the historic character of the site and which preserves the historic relationship between the building or buildings and the landscape" (NPS 2001, 105). The guidelines also state that new additions, exterior alterations, or related new construction should not destroy historic materials, features, and spatial relationships that characterize the historic property. The new work should be compatible with the historic materials, features, size, scale and proportion, and massing to protect the integrity of the property and its environment. New additions and adjacent or related new construction should be undertaken in such a manner that, if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired. These guidelines, and others for historic setting, is and will continue to be incorporated in the design of the project features at the historic Ferry Building and the surrounding historic properties. The consultation and application of the Secretary of the Interior's Standards would ensure that historic integrity is retained, and that the properties would remain eligible for listing in the NRHP and CRHR, therefore avoiding potential adverse effects.

The final design for the project will include consultation and review by the Port's Waterfront Design Advisory Committee and the San Francisco Historic Preservation Commission. Through the design review process, the Waterfront Design Advisory Committee is responsible for ensuring that project improvements comply with the Secretary of the Interior's Standards for Historic Rehabilitation, and that projects would not adversely affect historic properties or districts along the waterfront. Given the resources in the project area, the San Francisco Historic Preservation Commission will be involved in the design review process. The public is also invited to participate in the design review process. WETA will submit the preliminary final design for the weather protection canopies to the Port's Waterfront Design Advisory Committee and the San Francisco Historic Preservation Commission for review and comment; input received during this review will be incorporated in the final design plans. This process will ensure that the final design would also avoid adverse effects to historic properties or resources in either the Architectural APE or Focused Architectural APE.

3.9 BIOLOGICAL RESOURCES

3.9.1 Introduction to the Analysis

This section describes the existing biological setting of the project area and the San Francisco Bay. Existing species, including special-status species, and habitats, including designated critical habitat, are described. This section also provides a discussion of the federal, state, and local regulations applicable to construction and implementation of the proposed project.

Potential impacts related to maintenance dredging and permanent fill (including shading) are addressed. Temporary impacts to biological resources including pile installation which can generate underwater noise that can affect fish and marine mammals, and habitat disturbance during initial dredging, which can affect water quality and disturb bottom habitat are evaluated.

As described below, the proposed project's impacts would largely be negligible because the project would follow regulatory guidance and permit conditions to minimize impacts to fish and marine mammals. Initial dredging during construction and subsequent maintenance dredging would result in temporary bottom disturbance and increases in suspended sediment. Pile driving would result in underwater noise levels that could temporarily affect fish and marine mammal behavior. These impacts would be reduced with implementation of regulatory guidance and mitigation measures described in this section.

3.9.2 Affected Environment

This section provides an overview of the biological resources that may be affected by implementation of the Downtown San Francisco Ferry Terminal Expansion Project (project) alternatives. The project could potentially affect marine habitat and corresponding species. This section describes the habitat types found within the study area, and the species commonly found in them. Species protected under the California Endangered Species Act (CESA) and the Federal Endangered Species Act (FESA) and other regulations that may occur in the study area are also identified.

Environmental Setting

Study Area

The project location is in northeastern San Francisco, along The Embarcadero, between Pier 1 and Pier 14, including all areas west of The Embarcadero. The San Francisco Ferry Building, the Agriculture Building, the Golden Gate Ferry Terminal, the Ferry Plaza, Pier 2, water transit Gates B and E, and portions of San Francisco Bay are in the project area, as shown on Figure 1-1. Because the project area includes portions of San Francisco Bay, the study area includes the project areas, as well as the Central Bay portion of San Francisco Bay. The Central Bay encompasses areas east of the Golden Gate, south of the Richmond Bridge, and north of the San Mateo Bridge.

Habitat Types

San Francisco Bay represents the only natural habitats within or adjacent to the study area. As described above, the majority of the project area is characterized by urban development.

Developed Areas

Development within the project area is dominated by paved surfaces and Downtown San Francisco Ferry Terminal (Ferry Terminal) facilities. Although there are no native-vegetation communities present, landscaped ornamental plant species do occur. These ornamental species are not expected to be used as nesting habitat by birds; however, western gulls (*Larus occidentals*), house finches (*Carpodacus mexicanus*), and double-crested cormorants (*Phalacrocorax auritus*) could potentially use the rooftops of

buildings within and adjacent to the project area as nesting locations. Surveys associated with the Exploratorium Relocation Project noted the presence of more 100 roosting gulls along the rooftops of buildings on Piers 15 and 17, north of the project area. Bat surveys in the same area did not detect evidence of roosting in the interior or exterior of these buildings (CCSF, 2009).

Open Bay

The Goals Report (Goals Project, 1999) subdivides the open bay habitats into two habitat subunits: deep bay and shallow bay. Deep bay habitat is defined as those portions of San Francisco Bay deeper than 18 feet below mean lower low water (MLLW), including the deepest portions of San Francisco Bay and the largest tidal channels. Shallow bay is defined as that portion of San Francisco Bay between 18 feet below MLLW and MLLW. Open bay habitat is an important feeding area for the brown pelican (*Pelecanus occidentalis)*, double-crested cormorant, greater and lesser scaup (*Aythya marila* and *Aythya affinis*), and Caspian tern (*Hydroprogne caspia*). Anadromous fish, such as Chinook salmon and steelhead (*Oncorhynchus tshawytscha* and *Oncorhynchus mykiss*), use San Francisco Bay as a migratory corridor between their upstream spawning grounds and the Pacific Ocean. Marine mammals, such as harbor seals (*Phoca vitulina*) and the California sea lion (*Zalophus californianus*), can be found foraging within San Francisco Bay (Goals Project, 1999). Although there are no marine mammal haul out sites within the project area, harbor seals and the California sea lion may use the open water area for foraging.

Site Fauna

Plankton

Representing the lower levels of the food chain, plankton is important to many marine community members, including benthic organisms, fish, and mammals. There are three major groups of plankton: phytoplankton, zooplankton, and ichthyoplankton.

Phytoplankton are simple, often microscopic, plants or algae that represent the base of the marine food web. The dominant species found within San Francisco Bay are diatoms, dinoflagellates, and cryptophytes (Cloern and Dufford, 2005). Studies have shown that plankton growth and distribution within San Francisco Bay can be attributed to the amount of sunlight, turbidity, and influx of fresh water (Cloern et al., 1985; Alpine and Cloern, 1988; Cloern, 1999; Jassby et al., 2002; May et al., 2003; NOAA, 2007). The productivity of other organisms, including clams, worms, mussels, and zooplankton, depends on the growth of phytoplankton (SFEP, 1992).

Zooplankton consist of microscopic and macroscopic animals that either free-float or feebly swim in open water. Common zooplankton found in San Francisco Bay include species of copepods, rotifers, tintinnids, and meroplankton (larval forms of gastropods, bivalves, barnacles, polychaetes, and crustaceans such as the Dungeness crab [*Cancer magister*]) (Ambler et al., 1985; NOAA, 2007). Their distribution is driven by seasonality, geographical variations, and life histories (Ambler et al., 1985; Gewant and Bollens, 2005; NOAA, 2007). Zooplankton also provide an ecologically important food source for many types of fish, such as anchovies, smelt, and striped bass.

Ichthyoplankton are the eggs and larval forms of marine fishes, such as Pacific herring (*Clupea pallasii*), northern anchovy, goby (family *Gobiidae*), white sea bass (*Cynoscion nobilis*), staghorn sculpin, and diamond turbot (*Hypsopsetta guttulata*). Seasonal abundance and distribution of individual ichthyoplankton species are dependent on the reproductive cycles of the adult fish species and their circulation within San Francisco Bay.

Benthos

In San Francisco Bay, many benthic invertebrates, bottom-dwelling organisms, live within sedimentary or soft-bottom habitats, usually within the top 2 to 10 centimeters of the soft sediment. The benthic community inhabiting the nearshore area of this portion of the Central Bay is identified as Marine Muddy (Thompson et al., 2000), which is characterized by species such as polychaetes (*Euchone liminicola* and *Mediomastus* spp.); and by amphipods, including *Ampelisca abdita* and several species of the genus *Corophium*.

Some benthic invertebrates also live on hard substrates, which are much less common in San Francisco Bay compared to sedimentary habitats. Structures such as piers, breakwaters, rip rap, and other hard substrates function as habitat for colonization of benthic invertebrates. These artificial intertidal habitats are populated by algae, barnacles (*Balanus glandula* and *Chthamalus fissus*), mussels (*Mytilus spp.*), tunicates, bryozoans, cnidarians, and crabs. Additionally, these structures can serve as habitat for invasive species such as the alga (*Undaria pinnatifida*) (CCC, 2010).

Several of the more common benthic species in San Francisco Bay today were accidentally or intentionally introduced species (SFEP, 1992). Some of these nonindigenous species serve ecological functions similar to those of the native species that they have displaced. Examples of these include the eastern oyster (*Crassostrea virginica*), the Japanese littleneck clam (*Tapes philippinarum*), and the soft-shelled clam (*Mya arenaria*), all of which have supported commercial or sport fisheries. However, other species, such as *Corbula amurensis*, have a negative effect on phytoplankton and zooplankton populations and organisms that depend on them. The benthos also provide an important food source for many species of fish, birds, and mammals in the marine environment.

Shrimp and Crabs

San Francisco Bay is home to many species of shrimp and crab that are important for their recreational fishery and ecological values. The bay shrimp (*Crangon* spp.) is the most common shrimp reported by the California Department of Fish and Wildlife (CDFW) in San Francisco Bay (Baxter et al., 1999). Shrimp species are an important food source for virtually all species of fish, marine mammals, and water birds.

Although distributed widely throughout San Francisco Bay, the various species of shrimp have differing centers of distribution. For example, *C. franciscorum* are more commonly collected in the northern reach of San Francisco Bay (San Pablo to the west Delta) than in the Central or South bays, while *C. nigromaculata* are usually found in the Central and South bays (Baxter et al., 1999).

Crabs are both recreationally and ecologically important in San Francisco Bay. The most common species is the Dungeness crab, which supports an important commercial fishery. Other commonly found species include the red rock crab (*C. productus*), Pacific rock crab (*C. antennarius*), and the graceful rock crab (*C. gracilis*). These species are typically abundant in the more marine waters of the Central Bay, but are also found in the South Bay and San Pablo Bay (Baxter et al., 1999).

Due to their wide distribution within the Central Bay, *C. franciscorum*, *C. nigromaculata*, red rock crab, Pacific rock crab, and graceful rock crab could potentially occur in the project area.

Fish

More than 100 species of fish inhabit the San Francisco Bay system. The majority of species are native, but there are also many introduced species. Many complete all stages of life within San Francisco Bay; a smaller portion, anadromous fish, migrate from ocean waters, through the San Francisco Bay-Delta Estuary, and into a series of freshwater streams where they spawn. As adults or young-of-the-year, they

migrate back to the ocean. Whether spawned offshore and carried into San Francisco Bay by currents or spawned directly in the Bay, most of the anadromous species spend 4 to 8 months in San Francisco Bay before entering the ocean. Three anadromous salmonid species, steelhead, Chinook salmon, and green sturgeon (*Acipenser medirostris*), are known to occur within San Francisco Bay. Other common fish species include the Pacific sardine (*Sardinops sagax*), northern anchovy (*Engraulis mordax*), topsmelt (*Atherinops affinis)*, jacksmelt (*Atherinopsis californiensis)*, striped bass (*Morone saxatilis)*, white croaker (*Genyonemus lineatus*), Pacific herring, and English sole (NOAA, 2007).

Fish reported to be, or to have potential to be, in the project area include white croaker, northern anchovy, shiner perch, starry flounder, speckled sanddab, American shad (*Alosa sapidissima*), bat ray, brown rockfish (*Sebastes auriculatus)*, leopard shark, and striped bass (NOAA, 2007); and green sturgeon and Pacific herring (SFEP, 1992). Of these species, Pacific herring are of note, because they are an important component of the San Francisco Bay ecosystem and support one of the few remaining urban fisheries on the Pacific Coast. Although the Pacific herring is neither a protected species under the FESA or CESA nor a managed fish species under the Magnuson-Stevens Act, as a state fishery it is regulated under Sections 8550-8559 of the California Fish and Game Code. Pacific herring spawn within San Francisco Bay, broadcasting their adhesive eggs over kelp, rocks, or other structures. In past years, peak spawning has occurred along the San Francisco shore from December to March (USFWS, 1988). There is potential for spawning to occur on hard substrates within the project area.

Birds

Roughly 120 waterbird species from 16 families occur in San Francisco Bay. Of these birds, approximately two-thirds are represented by three families: *Anatidae* (waterfowl), *Laridae* (gulls and terns), and *Scolopacidae* (sandpipers and phalaropes).

San Francisco Bay serves as an important staging and wintering ground on the Pacific Flyway for numerous species of waterbirds, both common and uncommon. The Pacific Flyway is a bird migration corridor along the Pacific Coast that stretches as far north as northern Canada and Alaska, and as far south as the southern tip of South America (SFEP, 1992). In San Francisco Bay, the greatest waterbird abundance and species diversity is seen in winter, as birds migrate along the flyway. Each year, nearly one million waterfowl and more than one million shorebirds pass through this area.

Some of the most common birds in the open San Francisco Bay are diving ducks, including canvasback (*Aythya valisineria*), scoters, and scaup. San Francisco Bay supports the largest population of canvasback along the Pacific coast, 46 percent of the midwinter population in the Pacific Flyway (Goals Project, 2000). Additionally, San Francisco Bay provides crucial wintering habitat for surf scoter (Goals Project, 2000). Any of these species has the potential to occasionally be found in the project area.

The project area could also be used for foraging by brown pelicans, double-crested cormorant and Forester's tern (*Sterna forsteri*); and other fish-eating birds, such as osprey (*Pandion haliaetus)* and belted kingfisher (*Megaceryle alcyon*)—although there is no suitable nesting habitat for these species in the project area. Studies along the southern San Francisco Bay waterfront (Piers 24 and 96) noted the presence of nesting western gulls at Pier 24, and perching brown pelicans at Piers 32 and 36 (GGAS, 2007; GGAS, 2008); there is also potential for western gulls to nest in the project area on rooftops or other structures. Gulls are considered migratory and are protected under the Migratory Bird Treaty Act.

Marine Mammals

The most common marine mammals in San Francisco Bay are the Pacific harbor seal and the California sea lion, and these are the most likely species to occur in the project area. Other marine mammal species that have been seen occasionally in San Francisco Bay include the gray whale (*Eschrichtius robustus*), harbor porpoise (*Phocoena phocoena*), northern elephant seal (*Mirounga angustirostris*), Steller sea lion

(*Eumetopias jubatus*), northern fur seal (*Callorhinus ursinus*), and, less frequently, the southern sea otter (*Enhydra lutris*). On rare occasions, individual humpback whales (*Megaptera novaeangliae*) have entered San Francisco Bay.

Pacific harbor seals are nonmigratory and use San Francisco Bay year-round, where they engage in limited seasonal movements associated with foraging and breeding activities (Kopec and Harvey, 1995). Harbor seals forage in shallow waters on a variety of fish and crustaceans, and therefore could occasionally be found foraging in the project area. Harbor seals haul out (come ashore) in groups ranging in size from a few individuals to several hundred. Habitats used as haul-out sites include tidal rocks, bayflats, sandbars, and sandy beaches (Zeiner et al., 1990).

California sea lions breed in Southern California and along the Channel Islands. After the breeding season, males migrate up the Pacific Coast and enter San Francisco Bay. In San Francisco Bay, sea lions are known to haul out at Pier 39 in the Fisherman's Wharf area. During anchovy and herring runs, approximately 400 to 500 sea lions (mostly immature males) feed almost exclusively in the North and Central bays (USFWS, 1992) and could occasionally forage in the project area.

No seal or sea lion haul outs or pupping areas occur in the project area (Goals Project, 2000).

Terrestrial Mammals

There is no natural habitat in upland areas within the project area. The upland area consists of urban and marina development, intermixed with landscape vegetation. Bats, such as the Townsend's big-eared bat (*Corynorhinus townsendii*), are known to roost along the San Francisco waterfront, and could potentially occur within the project area.

Special-Status Species

Special-status species that occur, or have the potential to occur, in the project area were identified from several sources, including the following: the California Natural Diversity Data Base (CNDDB) (CDFG, 2011), the California Native Plant Society's online Inventory of Rare and Endangered Vascular Plants of California (CNPS, 2011), the U.S. Fish and Wildlife Service (USFWS) Sacramento Office's Endangered and Threatened Species list (USFWS, 2011). CNDDB and the USFWS online species databases were queried for the San Francisco North U.S. Geological Survey 7.5-minute quadrangle.

The resulting species list gathered from these sources is included in Appendix C, along with a general description of suitable habitat for each species, and the likelihood of occurrence in the project area. Species with the potential to occur in the project area are discussed in more detail below.

Fish

Central California Coast (CCC) Steelhead Distinct Population Segment (DPS) and Central Valley Steelhead DPS. CCC steelhead was federally listed as threatened on August 18, 1997, and is a CDFW species of concern. The Central Valley steelhead DPS was listed as threatened on March 19, 1998.

Steelhead historically ranged throughout the northern Pacific Ocean, from Baja California to Kamchatka Peninsula. Currently, their range extends from Malibu Creek in southern California to Kamchatka Peninsula (Busby et al., 1996). San Francisco Bay and its tributary streams support migrating steelhead populations. *O. mykiss* can be either anadromous or can complete their entire life cycle in fresh water. Those fish that remain in fresh water are referred to as rainbow trout. Steelhead, the anadromous form of *O. mykiss*, can spend several years in fresh water prior to smoltification, and can spawn more than once before dying, unlike most other salmonids (Busby et al., 1996). Adult steelhead typically migrate from the ocean to fresh water between December and April, peaking in January and February (Fukushima and

Lesh, 1998). Juvenile steelhead migrate as smolts to the ocean from January through May, with peak migration occurring in April and May (Fukushima and Lesh, 1998).

Sacramento Winter-Run, Central Valley Spring-Run, and Central Valley Fall/Late–Fall-Run Chinook Salmon Evolutionarily Significant Units (ESUs). The species historically ranged from the Ventura River in California to Point Hope, Alaska, on the eastern edge of the Pacific; and in the western portion of the Pacific Ocean from Hokkaido, Japan, to the Anadyr River in Russia (Healey, 1991). Three Chinook salmon ESUs migrate through San Francisco Bay: Sacramento River winter-run, Central Valley spring-run, and Central Valley fall/late–fall-run. Factors used in determining ESUs include spatial, temporal, and genetic isolation, maturation rates, and other life history traits. Chinook salmon have been categorized into 17 ESUs. Each ESU is considered a distinct race and has been given its own management status.

Both winter-run and spring-run Chinook salmon tend to enter freshwater as immature fish, migrate far upriver, and delay spawning for weeks or months. For comparison, fall-run Chinook salmon enter fresh water at an advanced stage of maturity, move rapidly to their spawning areas on the main stem or lower tributaries of rivers, and spawn within a few days or weeks of freshwater entry (Healey, 1991).

The winter-run, a state and federally listed endangered species, spawns in the upper Sacramento River below Keswick Dam. The fall/late–fall-run, a state and federally listed species of special concern, spawns in the Sacramento and San Joaquin River basins (Myers et al., 1998). Central Valley spring-run Chinook salmon, a state and federally listed threatened species, spawn in the Sacramento River Basin. All three runs are most commonly found migrating through the northern and central portions of San Francisco Bay (CDFG, 1987).

CCC Coho Salmon ESU. CCC Coho salmon (*Oncorhynchus kisutch*) are listed as endangered under FESA and endangered under CESA. This species ranges from Baja California, Mexico, north to Alaska, and southwest to Japan (McGinnis, 1984). This species exhibits a simple 3-year anadromous life cycle (Federal Register, 1999), rearing in fresh water for up to 15 months before migrating to the ocean. Coho salmon typically spend two growing seasons in the ocean before returning to their natal streams to spawn (Federal Register, 1996). The CCC coho salmon ESU occurs from Punta Gorda in Northern California south to, and including, the San Lorenzo River in central California (Weitkamp et al., 1995). Coho generally return to their natal streams between November and December. This species has been extirpated from tributaries of San Francisco Bay; therefore, coho are rare in San Francisco Bay.

North American Green Sturgeon Southern DPS. Green sturgeon (*Acipenser medirostris*) southern DPS are a federally threatened species. Green sturgeon are not abundant along the Pacific Coast, but are known to exist in the San Francisco Bay-Delta Estuary (Pycha, 1956; Skinner, 1962; Moyle, 1976). Green sturgeon are anadromous fish that spend most of their lives in salt water and return to spawn in fresh water. Green sturgeon rely on streams, rivers, estuarine habitat, and marine waters during their lifecycle. Adult southern DPS green sturgeon spawn in the reaches of the Sacramento River watershed with swift currents and large cobble. Pre-spawn green sturgeon enter the Bay between late February and early May, as they migrate to spawning grounds in the Sacramento River (Heublein et al., 2009). Post-spawning adults may be present in the Bay after spawning in the Sacramento River in the spring and early summer for months prior to migrating to the ocean. Juvenile green sturgeon move into the Delta and San Francisco estuary early in their juvenile life history, where they may remain for 2 to 3 years before migrating to the ocean (Allen and Cech, Jr., 2007; Kelly et al., 2007). Sub-adult and nonspawning adult green sturgeon use both ocean and estuarine environments for rearing and foraging.

Longfin Smelt. Longfin smelt are listed as threatened under CESA, and a candidate species under FESA. Longfin smelt (*Spirinchus thaleichthys*) are small (approximately 9 to 11 centimeters standard length at maturity), euryhaline fish that are a native fish known to occur within the San Francisco Estuary, including the Delta, Suisan Marsh, and San Francisco Bay to the Golden Gate (USFWS, 2009). The

population found within San Francisco Bay represents the largest known longfin smelt population in California (Rosenfield and Baxter, 2007). In addition, this population is in the southernmost known range for the Longfin smelt (Rosenfield and Baxter, 2007; USFWS, 2009). Depending on the salinity levels within an area, longfin smelt spawning can occur between November and late June (Moyle, 2002; USFWS, 2009). Although there is no current data on specific spawning locations within San Francisco Bay, recently published reports indicate spawning probably occurs near the mixing zones between fresh and brackish water (Rosenfield and Baxter, 2007) in the northern portion of San Francisco Bay and the lower San Joaquin Delta (Moyle, 2002). Juveniles and sub-adult longfin smelt use deep water habitats, often foraging on opossum shrimp (*Neomysis mercedis*) (USFWS, 2009; DRERIP, 2010).

Mammals

Southern Sea Otter. The southern sea otter is considered a threatened population under FESA and is protected by the Marine Mammal Protection Act of 1972. Approximately 16,000 to 18,000 sea otters were formerly distributed along the California coastline. After extensive harvesting in the 18th and 19th centuries, fewer than a hundred sea otters remained off the isolated coastline of Big Sur, California. After years of protection, the population increased to 500 to 600 individuals by 1950 and, thereafter, increased by approximately 5 percent annually until 1976, when the increase slowed (Estes, 1990). Currently, about 2,200 individuals exist in the southern sea otter range. They have expanded their range to north of Santa Cruz (about Half Moon Bay), and are rarely seen in San Francisco Bay.

Other Marine Mammals. All marine mammals are protected under the Marine Mammal Protection Act of 1972. San Francisco Bay supports several common marine mammal species, including the Pacific harbor seal, California sea lion, and occasionally, the gray whale (*Eschrichtius robustus*). None of these species are listed as threatened or endangered. No seal or sea lion haul outs or pupping areas occur in the study area (Goals Project, 2000), although both species use shallow subtidal areas for foraging. Harbor seals would be the marine mammal most likely to be observed in the waters of the study area.

Critical Habitat

Steelhead. Critical habitat was established for the CCC steelhead distinct population segment on September 2, 2005 (70 Code of Federal Regulations [CFR] 52488 52626). Designated critical habitat for this species includes all portions of San Francisco Bay below the ordinary high water line. The project area is within this designated critical habitat. The designation includes natal spawning and rearing waters, migration corridors, and estuarine areas that serve as rearing areas. The lateral extent of this critical habitat is defined by the ordinary high water line (NOAA, 2005).

Chinook Salmon. Critical habitat for the Sacramento River winter-run Chinook salmon was designated by the National Marine Fisheries Service (NMFS) (50 CFR Part 226) in 2005. The designation includes natal spawning and rearing waters, migration corridors, and estuarine areas that serve as rearing areas. Designated critical habitat for this species includes the waters of San Francisco Bay north of the San Francisco – Oakland Bay Bridge, which includes the project area. The lateral extent of this critical habitat is defined by the ordinary high water line (NOAA, 2005).

Green Sturgeon. On October 9, 2009, the NMFS issued a final designation of critical habitat for green sturgeon (74 CFR 52300-52351). This includes the designation of specific rivers, estuaries, and coastal areas as critical habitat for this species. Under this ruling, the entire San Francisco Bay below mean higher high water is designated as critical habitat, which includes the portion of San Francisco Bay within the project area (NMFS, 2009).

Essential Fish Habitat

San Francisco Bay is classified as Essential Fish Habitat (EFH) under the Magnuson-Stevens Fishery Conservation and Management Act. The Central Bay serves as habitat for 14 species of commercially important fish and sharks that are federally managed under two fisheries management plans (FMPs): the Pacific Groundfish FMP and the Coastal Pelagic FMP. The entire San Francisco Bay is classified as EFH for species managed under the Pacific Coast Salmonid FMP, which includes Chinook salmon.

The Pacific Groundfish FMP is designed to protect habitat for more than 90 species of fish, including rockfish, flatfish, groundfish, some sharks and skates, and other species that associate with the underwater substrate. This includes both rocky and muddy substrates.

The Coastal Pelagic FMP is designed to protect habitat for a variety of fish species that are associated with open coastal waters. Fish managed under this plan include planktivores and their predators.

The Pacific Salmon FMP is designed to protect habitat for commercially important salmonid species. Chinook salmon is the only one of these species that may be seasonally present in the project area. Although some evidence suggests that migrating salmonids move along the deeper channels of San Francisco Bay, migrational behavior in estuaries is poorly understood, and migrating fish may pass through the project area.

Although they are not a state or federally listed species, native oysters (*Ostrea conchaphila*) are considered a historical keystone species for San Francisco Bay, and contribute to EFH where oyster beds occur. A century ago, native oysters were a highly visible component of San Francisco Bay ecosystems, supporting industries from cement-making to gourmet dining. Oysters require hard substrate for larval settlement, preferably other oyster shells, and this settling habit led to the formation of oyster reefs, the nooks and crannies of which support communities of fish, crab, and other invertebrates. By the early 1900s, however, overfishing, habitat degradation, and the introduction of nonnative shellfish led to the decline of native oysters. Oyster beds are not known to occur in the project area.

Regulatory Setting

Federal

Federal Endangered Species Act (16 United States Code [USC] 1531-1544)

FESA provides protection for federally listed special-status species, and requires conservation of the critical habitat for those species. An "endangered" species is a species in danger of extinction throughout all or a significant portion of its range. A "threatened" species is one that is likely to become "endangered" in the foreseeable future without further protection. Other federally listed special-status species include "proposed" and "candidate" species. Proposed species are those that have been officially proposed (in the Federal Register) for listing as threatened or endangered. Candidate species are those for which enough information is on file to propose listing as endangered or threatened. A "delisted" species is one whose population has reached its recovery goal and is no longer in jeopardy.

Areas of habitat considered essential to the conservation of a listed endangered or threatened species may be designated as critical habitat (referred to above), which is protected under FESA. Critical habitat designations are intended as a tool to be used by the USFWS and NMFS in helping federal agencies comply with their obligations under Section 7 of FESA.

The FESA is administered by the USFWS and the NMFS. In general, NMFS is responsible for protection of FESA-listed marine species and anadromous fishes, while other species are under USFWS jurisdiction.

FESA Section 9 prohibits the "take" of federally listed special-status species. Section 7 of this act requires formal consultation with USFWS or NMFS for projects that may affect those species that are either listed as or proposed for listing as endangered or threatened, to ensure that the proposed action will not jeopardize federally listed special-status species or destroy or adversely modify designated critical habitat. The Section 7 consultation process provides a means of authorizing the "take" of federally listed special-status species. Taking is defined by FESA (Section 3[19]) to mean "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct." The Federal Transit Administration (FTA) and the San Francisco Bay Area Water Emergency Transportation Authority (WETA) have initiated consultation with NMFS under the FESA.

Fish and Wildlife Coordination Act (16 USC 661-667e)

This act requires consultation with the USFWS, NMFS, and state agencies responsible for fish and wildlife resources for all proposed federal undertakings and nonfederal actions needing a federal permit or license that would impound, divert, deepen, or otherwise control or modify a stream or water body, and to make mitigation and enhancement recommendations to the involved federal agency.

Additionally, the act requires that wildlife conservation be coordinated with other water resource development programs that have joint jurisdiction over the water resource. Determination under this authority for specific projects in estuarine areas constitute compliance with the provisions of the Estuary Protection Act, as discussed below.

Estuary Protection Act (16 USC 1221–1226)

Under this act, the Secretary of the Interior is required to review all project plans and reports for land and water resource development affecting estuaries, and make an assessment of likely impacts and related recommendations for conservation, protection, and enhancement of estuaries.

Magnuson-Stevens Fishery Conservation and Management Act (16 USC 1801-1882)

The primary purpose of this act is conservation and management of fishery resources in the United States, development of domestic fisheries in the United States, and phasing out foreign fishing activities within federal waters (the 200-mile limit extending from the edge of state waters).

The Amended Magnuson-Stevens Fishery Conservation and Management Act of 1996, also known as the Sustainable Fisheries Act (Public Law 104-297), requires all federal agencies to consult with the Secretary of Commerce on proposed projects authorized, funded, or undertaken by that agency that may adversely affect EFH. The main purpose of the EFH provisions of the Sustainable Fisheries Act is to avoid loss of fisheries due to disturbance and degradation of the fisheries habitat. FTA and WETA have initiated consultation with NMFS under the Magnuson-Stevens Fishery Conservation and Management Act.

Migratory Bird Treaty Act (16 USC 703-712)

This act established special protection for migratory birds by regulating hunting or trade in migratory birds. Furthermore, this act prohibits anyone to take, possess, buy, sell, purchase, or barter any migratory bird listed in 50 CFR 10, including feathers or other parts, nests, eggs, or products, except as allowed by implementing regulations (50 CFR 21). Definition of "take" includes any disturbance that causes nest abandonment and/or loss of reproductive effort (e.g., killing or abandonment of eggs or young), and such activity is potentially punishable by fines and/or imprisonment.

Marine Mammal Protection Act (16 USC 1361-1421h)

The Marine Mammal Protection Act, adopted in 1972, makes it unlawful to take or import any marine mammals and/or their products. Under Section 101(a)(5)(D) of this act, an incidental harassment permit may be issued for activities other than commercial fishing that may impact small numbers of marine mammals. An incidental harassment permit covers activities that extend for periods of not more than 1 year, and that will have a negligible impact on the impacted species. Amendments to this act in 1994 statutorily defined two levels of harassment. Level A harassment is defined as any act of pursuit, torment, or annoyance that has the potential to injure a marine mammal in the wild. Level B harassment is defined as harassment having potential to disturb marine mammals by causing disruption of behavioral patterns including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering.

Executive Order 13112: Invasive Species

The purpose of this order is to prevent the introduction of invasive species and to provide control for the spread of invasive species that have already been introduced. This law prohibits the federal government to "authorize, fund, or carry out actions that it believes are likely to cause or promote the introduction or spread of invasive species in the United States or elsewhere unless, pursuant to guidelines that it has prescribed, the agency has determined and made public its determination that the benefits of such actions clearly outweigh the potential harm caused by invasive species; and that all feasible and prudent measures to minimize risk of harm will be taken in conjunction with the actions."

Clean Water Act Section 404 (33 USC 1251-1376) and Rivers and Harbors Action Section 10 (33 USC 403)

Under Section 404 of the Clean Water Act, the U.S. Army Corps of Engineers (Corps) regulates the disposal of dredged and fill materials into "waters of the United States," which include intrastate lakes, rivers, streams (including intermittent streams), bayflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, and wetlands adjacent to any water of the United States [33 CFR 328]. In areas subject to tidal influence, Section 404 jurisdiction extends to the high tide line or boundary of any adjacent wetlands.

The Corps also regulates navigable waters under Section 10 of the Rivers and Harbors Act. Navigable waters are defined as "those waters of the United States that are subject to the ebb and flow of the tide shoreward to the mean high water mark and/or are presently used, or have been used in the past, or may be susceptible to use to transport interstate or foreign commerce" [33 CFR 322.2].

In San Francisco Bay, waters of the United States include open water, seasonal and tidal wetlands, and intertidal habitats. Any dredge or fill activities for the project would require a permit from the Corps.

Long Term Management Strategy Management Plan for Dredging in San Francisco Bay

The Long Term Management Strategy (LTMS) Management Plan for maintenance dredging of navigation channels in San Francisco Bay was established in 2001. It represents a cooperative program among the U.S. Environmental Protection Agency, Corps, Regional Water Quality Control Board (RWQCB), San Francisco Bay Conservation and Development Commission (BCDC), and regional stakeholders, including the National Oceanic and Atmospheric Administration (NOAA) NMFS, CDFW, area environmental organizations, and water-related industries. The focus of the LTMS is sediment management in San Francisco Bay. It maximizes the use of dredged material as a beneficial resource, and establishes a cooperative permitting framework for dredging, dredged material disposal, and development of beneficial reuse site for dredge material. A key component of the LTMS is the establishment of construction work windows, which include time periods when in-water construction activities are allowed, restricted, or prohibited. If a project proponent wishes to construct during restricted periods,

formal consultation would be required with the appropriate resource agencies (NOAA, USFWS, and CDFW). Through formal consultation, specific measures must be implemented to avoid or reduce potential impacts. In the project area, the authorized work window for steelhead and salmonids is June 1 through November 30, and for Pacific herring is March 1 through November 30.

State

California Endangered Species Act (California Fish and Game Code 2050-2116)

Similar to FESA, CESA (along with the Native Plant Protection Act) authorizes the California Fish and Game Commission to designate, protect, and regulate the taking of special-status species in the state of California. CESA defines "endangered" species as those whose continued existence in California is jeopardized. State-listed "threatened" species are those not presently threatened with extinction, but which may become endangered if their environments change or deteriorate. Any proposed projects that may adversely impact state-listed threatened or endangered species must formally consult with the CDFW.

Section 2080 of the California Fish and Game Code prohibits the taking of state-listed plants and animals. The CDFW also designates "fully protected" or "protected" species as those which may not be taken or possessed. Species designated as fully protected or protected may or may not be listed as endangered or threatened.

In addition to state-listed special-status species, the CDFW also maintains a list of "Species of Special Concern," most of which are species whose breeding populations in California may face extirpation. To avoid the future need to list these species as endangered or threatened, the CDFW recommends consideration of these species, which do not as yet have any legal status, during analysis of the impacts of proposed projects.

3.9.3 Impact Evaluation

This section includes an analysis and determination of the potential adverse and beneficial impacts of the proposed project on biological resources. The analysis considered whether the project would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, proposed, or listed species under or otherwise protected by the FESA or the CESA;
- Alter or diminish critical habitat, EFH, or a special aquatic site, including eelgrass beds, mudflats, and wetlands;
- Result in the reduction of protected wetland habitat as defined in Section 404 of the Clean Water Act, or result in alteration of desirable functions and values through direct removal, filling, hydrological interruption, or other means;
- Cause the introduction or substantial spread of invasive nonnative plants or wildlife;
- Interfere substantially with the movement of resident or migratory fish or wildlife species;
- Cause substantial or sustained impact to spawning habitat of commercially important species (e.g., Pacific herring);
- Cause underwater sound pressure levels during construction or operation that exceed NMFS guidelines for protection of marine mammals or fish;
- Conflict with any locally applicable policies protecting biological resources; or

- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other applicable Habitat Conservation Plan.

A literature review was conducted to investigate the potential presence of biological resources in the project area, including listed, proposed, and candidate species. Information was obtained from the following sources:

- The Sacramento Office of the USFWS online database for the San Francisco North, San Francisco South, and Oakland West U.S. Geological Survey 7.5-minute quadrangles;
- California Natural Diversity Database Rarefind 3, occurrence records from the above 7.5-minute quadrangles (CDFG, 2011);
- CDFG Game Wildlife Habitat Relations System (CDFG, 2010) (used to identify the habitat requirements and distribution of special-status species); and
- Studies presented in scientific journals and other publications about San Francisco Bay.

Effects to fish and marine mammals from construction noise are evaluated using a spreadsheet noise calculation tool developed by the NMFS, and by comparison to measured noise levels for similar underwater work. Noise levels were compared to NMFS guidelines for the protection of marine mammals and fish.

Qualitative discussions are provided below for indirect impacts to species, such as from shading, increased turbidity and other water quality effects, and bottom disturbance. These impacts are evaluated by comparing proposed project features and construction methods with impacts observed and reported in the literature.

There are no Habitat Conservation Plans, Natural Community Conservation Plans, or other approved local, regional, or state conservation plans that apply to the project area.

The federal and state special-status species most likely to occur within the marine environment of the project area include adult and juvenile salmonids (Chinook, steelhead), green sturgeon, and longfin smelt. The Pacific herring, a species of commercial importance, could also be present within the project area. In addition, several common marine mammal species, including the Pacific harbor seal, California sea lion, and occasionally the gray whale (*Eschrichtius robustus*), could be present within the project area. These species are not listed as threatened or endangered, but they are protected under the Marine Mammal Protection Act. Harbor seals would be the marine mammal most commonly observed in the waters of the study area. Potential impacts to these species and their habitat are analyzed below.

The project area is also within the boundaries of San Francisco Bay, and contains critical habitat for three special-status species—green sturgeon, steelhead, and Chinook salmon. In addition, the project area and surrounding water is considered EFH for a number of species managed under the Magnuson-Stevens Act. Sensitive habitats, such as eel grass beds and oyster beds, are protected under state and federal law. However, these habitats are not present within the project area.

WETA and FTA have initiated consultation with NMFS under Section 7 of the FESA for impacts to special-status species and critical habitat, and for impacts to EFH under the Magnuson-Stevens Fishery Conservation and Management Act. The status of consultation is described in more detail in Impacts 3.9-1, 3.9-2, 3.9-4, and 3.9-5. The consultation process will be completed prior to the release of the Final Environmental Impact Statement/Environmental Impact Report (EIS/EIR).

Direct Impacts

Impact 3.9-1: Potential Adverse Effects of Maintenance Dredging on Special-Status or Commercially Valuable Marine Species

No Action Alternative

Regular maintenance dredging is not currently required to maintain operations at existing Gates B and E. Patterns of sediment accumulation in the Ferry Terminal area would be expected to be similar to historically observed patterns; therefore, regular maintenance dredging would not be anticipated for the No Action Alternative. Therefore, there would be no impact.

Action Alternative

As described in Section 2.3.6, it is anticipated that maintenance dredging could be required at Gates F and G. Dredging within these areas would be anticipated to occur every 3 to 4 years, and approximately 5,000 to 10,000 cubic yards of material could be removed. Periodic maintenance dredging would disturb bottom sediments, which would increase turbidity, disturb benthic habitat and associated communities of organisms living in or on the mud bottom, and affect EFH. This disturbance could result in the temporary loss or reduction of habitat suitable for fish foraging for sensitive species such as steelhead, Chinook salmon, green sturgeon, and longfin smelt, as well as fish managed under the Magnuson-Stevens Fisheries Act. Pacific herring, a commercially important species, could also be affected if spawning had occurred in the area just before or during maintenance dredging activities. Mortality of fishes could result from entrainment in dredging equipment. The behavior of marine mammals such as harbor seals could also be affected by dredging activities.

Refer to Impact 3.9-4 for a more detailed discussion of the potential for dredging to increase suspended sediment, entrain species, disrupt spawning, and physically impact the benthos.

Increased turbidity from maintenance dredging activities is not expected to have a substantial effect on plankton productivity. Turbid plumes from maintenance dredging would be small in relation to surrounding areas of San Francisco Bay, as well as short in duration (on the order of a few weeks every 3 to 4 years). In addition, San Francisco Bay waters in the study area are naturally turbid due to resuspension of sediments from wind waves and tides, and light penetration is generally limited to a few feet from the surface.

Maintenance dredging impacts could be substantial, however, based on the frequency of the maintenance dredging, coupled with the relatively small area being dredged; it is anticipated that impacts would be short-term and similar to other small maintenance dredging operations in San Francisco Bay.

Green sturgeon and longfin smelt are present in San Francisco Bay all year; therefore, regardless of when maintenance dredging is conducted, authorization of potential incidental take of these species would be required. WETA and FTA are consulting with NMFS, under Section 7 of FESA (for green sturgeon); and would be required to consult with CDFW, under Fish and Game Code Section 2080.1 (for longfin smelt). To minimize impacts to special-status and commercially important fish species, Mitigation Measure BIO-1 will be implemented. This measure requires that dredging be conducted during the LTMS dredge window of June 1 through November 30, to the extent feasible. During this time period, sensitive life stages of listed salmonids are not present in San Francisco Bay. This work window would also avoid the Pacific herring spawning season. Mitigation Measure BIO-1 also requires the use of the smallest feasible dredge head for mechanical dredge, to reduce the likelihood of entrainment; and measures to prevent exposure of fish and other aquatic organisms to contaminants that may be present in sediments exposed by dredging.

In the case that dredging must be extended outside of the work window, FTA and WETA have initiated consultation with NMFS to authorize potential incidental take of federally listed salmonids (see more detail below on the status of consultation). In addition, dredging outside the work window would require a waiver from CDFW—which may include specifications such at monitoring by a qualified biologist, and halting of dredging activities for a specified period if herring spawning activity is noted in the construction area.

National Environmental Policy Act (NEPA) Determination. The proposed project's maintenance dredging activities have the potential to adversely impact special-status and commercially valuable marine species, including their habitats. With implementation of Mitigation Measure BIO-1 and adherence to the requirements of NMFS' Biological Opinion, impacts of maintenance dredging on special-status and commercially valuable marine species would be reduced, and would not be adverse.

WETA and FTA have also initiated consultation with NMFS under Section 7 of the FESA, and for EFH under the Magnuson-Stevens Fishery Conservation and Management Act. The Biological Assessment was submitted to NMFS for further action. FTA's Biological Assessment included the following conclusions:

- If dredging activities occur during the proposed work window between June 1 and November 30, the project may affect, but is not likely to adversely affect steelhead, Sacramento River winter-run Chinook salmon, and Central Valley spring-run Chinook salmon.

- If dredging activities occur outside of the proposed work window (i.e., between December 1 and May 31), the project is likely to adversely affect steelhead, Sacramento River winter-run Chinook salmon, and Central Valley spring-run Chinook salmon.

- Dredging activities for the project, regardless of timing, are likely to adversely affect green sturgeon.

With regard to designated critical habitat in the action area, for the purposes of the Biological Assessment, FTA has determined and WETA supports the determination that the project does not appreciably diminish the value of designated critical habitat for CCC and Central Valley steelhead, Sacramento River winter-run Chinook salmon, and green sturgeon. Therefore, the project may affect, but is not likely to adversely modify, the capability of designated critical habitat for these species to support the survival and recovery of the species. With regard to EFH in the action area, FTA has determined and WETA supports the determination that EFH may be disturbed due to dredging activities, which may adversely affect EFH for Pacific salmon species.

However, the implementation of avoidance and minimization measures described in Mitigation Measure BIO-1 would minimize these potential effects. These avoidance and minimization measures, in combination with the ability of these species to move themselves out of the range affected by injury-causing noise and turbidity, would minimize the direct impacts on individuals, and thus on populations of the species. In addition, as described in more detail in the Biological Assessment, the potential impacts to species and their habitats (critical habitat and EFH) would be temporary and not likely to result in death of injury to individuals. The consultation process will be completed prior to the release of the Final EIS/EIR.

California Environmental Quality Act (CEQA) Determination. The proposed project's maintenance dredging activities have the potential to impact special-status and commercially valuable marine species, including their habitats. Mitigation Measure BIO-1 includes measures to reduce the impacts on special-status and commercially valuable marine species from maintenance dredging. Therefore, with implementation of Mitigation Measure BIO-1 and adherence to the requirements of NMFS' Biological Opinion, impacts from maintenance dredging would be less than significant with mitigation.

Impact 3.9-2: Potential Adverse Effects of Permanent Fill in San Francisco Bay on Benthic Habitat and Marine Species

No Action Alternative

Under the No Action Alternative, no physical alterations to the Ferry Terminal would be made; therefore, there would be no change in the amount of permanent fill of Waters of the United States. Therefore, there would be no impact.

Action Alternative

The installation of permanent in-water and over-water structures, including piers, gangways, floating docks, and deck areas, would result in permanent fill in Waters of the United States. The permanent fill could impact benthic habitat, affecting EFH and marine species in the study area. The fill resulting from the project consists of two types: 1) permanent fill from structures (piles) that would result in loss of benthic habitat; and 2) shading from overwater structures, such as floating docks, gangways, and decking. Although shading would not result in the permanent loss of habitat, it can alter the remaining habitat and the composition of species that use the habitat. In addition to installing new structures, the proposed project would remove some existing fill (piles) and overwater structures from the project area.

There are no jurisdictional wetlands, mudflats, eelgrass beds, or other habitats within the study area that would be defined as "special aquatic sites." No fill would occur in special aquatic sites.

Permanent Fill Due to Placement of Piles. Under Section 404 of the Clean Water Act, placement of piles would be considered fill in Waters of the United States. Placement of fill would require a permit from the Corps (Section 404). As detailed in Table 2-2, the proposed project would result in a net increase of 345 square feet (0.008 acre) of fill in bottom habitat in the North and South Basins. The placement of piles would be within the existing Ferry Terminal area, which has a number of structures already in place, and is considered a relatively disturbed environment in comparison to other open water portions of central San Francisco Bay. The small loss of benthic habitat would be considered negligible in this environment.

Shading from Overwater Structures. The proposed project improvements would result in a change in the subtidal area that would be shaded by structures in the project area. There would also be a net increase of shading of approximately 22,130 square feet (0.50 acre). It should be noted that the net change in area of shade (both "floating fill" and "shadow fill") shown in Table 2-2 includes the areas of fill that would be considered "replacement fill" (areas where an existing structure is removed, but a new structure is built in its place). Although these "replacement fill" areas can be considered new fill for certain regulatory purposes, from a biological perspective replacement fill does not represent additional shading, because this shading already occurs in the existing environment. Therefore, for biological purposes, the area of shading increase only considers those areas that would represent new shading (i.e., subtracts the replacement fill from the net change shown in Table 2-2).

Shade cast from overwater structures reduces the amount of ambient light that can reach into the water column beneath the structure. It can affect invertebrate and vertebrate community composition, reduce fish prey forage, and alter fish species composition and predator-prey relationships in comparison to typical open-water conditions (Nightingale and Simenstad, 2001). Decreased light beneath the structures could also affect phytoplankton production (which represents the base of the food chain), and the presence and growth of other marine algae.

San Francisco Bay waters within the Ferry Terminal basin are subject to currents and daily tidal fluctuations that circulate water through the terminal area. Water flowing beneath the structures due to tidal currents would limit the duration that phytoplankton cells would be subject to shading conditions.

Wind waves and tidal currents in San Francisco Bay cause naturally high levels of sediments in suspension, limiting ambient light penetration and phytoplankton production.

The new structures would be placed within the existing Ferry Terminal area, where a number of overwater structures already exist. The increased area of shade that would result from the project is small relative to the size of the surrounding open waters of San Francisco Bay, and the impact on phytoplankton production and the food chain is expected to be negligible.

The reduction in light resulting from overwater structures can also create "behavioral barriers" that can deflect or delay fish migration, reduce prey resource production and availability, and alter predator-prey relationships (Nightingale and Simenstad, 2001). Many predatory fish, such as striped bass (*Morone saxatilis*), are associated with in-water structures (Haeseker et al., 1996) and could occur within the area associated with the new structures. This could result in a slight increase in predation on larval and young fish in the local project area. This increase would be most pronounced during high tide, when larger predatory fish move into shallow water to feed. However, larval or young fish are likely to avoid areas that are shaded by the pier. Due to the daily changes in water depths resulting from tidal action, it is unlikely that prey fish would remain in this zone for extended periods, and experience large increases in predation. The impact from the project is expected to be negligible in the current environment of the Ferry Terminal.

NEPA Determination. Impacts to benthic habitat, affecting EFH and marine species, related to the placement of fill in the project area would not be adverse.

WETA and FTA have also initiated consultation with NMFS under Section 7 of the FESA, and for EFH under the Magnuson-Stevens Fishery Conservation and Management Act. The Biological Assessment was submitted to NMFS for further action. With regard to designated critical habitat in the action area, for the purposes of the Biological Assessment, FTA has determined and WETA supports the determination that the project does not appreciably diminish the value of designated critical habitat for CCC and Central Valley steelhead, Sacramento River winter-run Chinook salmon, and green sturgeon. Therefore, the project may affect, but is not likely to adversely modify, the capability of designated critical habitat for these species to support the survival and recovery of the species. With regard to EFH in the action area, FTA has determined and WETA supports the determination that EFH may be modified but modification would be minor. The consultation process will be completed prior to the release of the Final EIS/EIR.

CEQA Determination. Impacts to benthic habitat, affecting EFH and marine species, related to the placement of fill in the project area would be less than significant.

Impact 3.9-3: Interference with the Movement of Resident of Migratory Fish or Wildlife Species Due to Modification of Ferry Terminal Facilities

No Action Alternative

This alternative would not modify the current Ferry Terminal facilities. Therefore, the current movement of resident or migratory fish or wildlife species would not be altered.

Action Alternative

This alternative would result in the modifications to the Ferry Terminal facilities, through the removal and installation of additional piers, gangways, floating docks, and pile-supported deck areas. Currently, structures exist within the project areas that are not known to impede the movement of marine species. Although the modifications would result in a small net increase in the total area of overwater structures within the project area, the addition is relatively small. The proposed structures would be supported by

piles, or would be floating platforms. No solid structures, such as a breakwater, are proposed; therefore, the project would not interfere with the movement of resident or migratory fish or other wildlife species.

NEPA Determination. The project would not adversely impact the movement of resident or migratory fish or wildlife species.

CEQA Determination. The project would have a less-than-significant impact on the movement of resident or migratory fish or wildlife species.

Indirect Impacts

The Program EIR for WETA's expansion of water transit service analyzed the effects of expansion of service for the system, and the effects of an increase in water transit vessel traffic and operation on San Francisco Bay, its habitats, and its species. Separate environmental analysis pursuant to NEPA and CEQA will be prepared for each new route, which analyzing potential impacts at the route origin.

No indirect effects have been identified for this project. The proposed project would not substantially affect primary productivity or food resources in the study area or surrounding San Francisco Bay, and no indirect effects to animals higher in the food chain are expected.

Construction Impacts

The No Action Alternative would not result in physical modification to the Ferry Terminal, and no construction would be required. Therefore, there would be no construction impacts to biological resources.

Impact 3.9-4: Potential Adverse Effects on Special-Status or Commercially Valuable Marine Species from Dredging Activities during Construction

Construction of the proposed project would require initial dredging in the Ferry Terminal area for the new gates. Approximately 29,500 to 33,000 cubic yards of material would be dredged (refer to Table 2-10). Dredging is expected to take approximately 1 month for Gate A, and 2 months for Gates F and G.

Dredging activities associated with construction could temporarily increase suspended sediments in the vicinity of the project site (potentially affecting fish and marine mammal behavior and spawning), entrain fish in the dredging equipment, and result in physical disturbance to benthic organisms in the dredged area. These effects could be substantial, as discussed in more detail below. Implementation of Mitigation Measure BIO-1 would require that, to the extent possible, dredging would occur during the LTMS dredge window of June 1 through November 30. During this time period, sensitive life stages of listed salmonids are not present in San Francisco Bay. This work window would also avoid the Pacific herring spawning season. Mitigation Measure BIO-1 also requires the use of the smallest feasible dredge head for mechanical dredge, to reduce the likelihood of entrainment; and measures to prevent exposure of fish and other aquatic organisms to contaminants that may be present in sediments exposed by dredging. Mitigation Measure BIO-1 would minimize impacts to listed and commercially important fish species.

In the case that dredging must be extended outside of the work window, FTA and WETA have initiated consultation with NMFS to authorize potential incidental take of federally listed salmonids. If dredging must occur during the herring spawning season, a waiver from CDFW would be required. However these are only typically granted if unforeseen circumstances arise (i.e., in emergency situations). A waiver, if granted, may include specifications such as monitoring by a qualified biologist, and halting of dredging activities for a specified period if herring spawning activity is noted in the construction area.

Green sturgeon and longfin smelt are present in San Francisco Bay all year; therefore, regardless of when maintenance dredging is conducted, authorization of potential incidental take of these species would be required. WETA and FTA have initiated consultation with NMFS, under Section 7 of FESA (for green sturgeon); and would be required to consult with CDFW, under Fish and Game Code Section 2080.1 (for longfin smelt).

In addition, as discussed in Section 3.11, Hydrology and Water Quality, dredging and other in-water activities construction activities would comply with Corps, U.S. Environmental Protection Agency, RWQCB, and BCDC regulations and conditions in issued permits, including best management practices for avoiding or reducing potential impacts related to resuspended sediments.

Suspended Sediments

Suspended sediments have been shown to affect fish behavior, including avoidance responses, territoriality, feeding, and homing behavior. Wilber and Clarke found that suspended sediments result in cough reflexes, change in swimming activity, and gill flaring. Suspended sediments can have other impacts, including abrasion to the body and gill clogging (Wilber and Clarke, 2001). Generally, bottom-dwelling fish species are most tolerant of suspended solids, and filter feeders are the most sensitive. The effect of dredging on fish can vary with the life stage; early life stages tend to be more sensitive than adults. Adult fish (including salmonids, green sturgeon, and longfin smelt) would be motile enough to avoid areas of high turbidity plumes caused by the dredging, and it is expected that adult fish would avoid the affected areas during dredging activities. Effects to sensitive life stages of listed salmonids would be avoided if dredging is conducted during the LTMS dredging work window, during which time the more sensitive juveniles would not be present in the project area. Dredging activity during the Pacific herring spawning season (November through March [Watters et al., 2004]) in areas where spawning occurs could impact the eggs and spawning success. Impacts to spawning Pacific herring could be substantial if spawning in the project area occurs during dredging operations.

Marine mammals would not be substantially affected by dredging operations. Seals and sea lions forage over large areas of San Francisco Bay, and can avoid areas of increased turbidity and dredging disturbance. The disturbance would be temporary.

Increased sediment concentrations in the upper water column can reduce sunlight penetration, and thus reduce phytoplankton productivity. Turbid plumes from dredging that could limit productivity would be localized to the project area, and would be small in relation to surrounding areas of San Francisco Bay. The impact of turbidity on phytoplankton productivity due to decreased light transmission would depend largely on the difference between background turbidity and increased turbidity from dredged material during the time period in which dredging takes place. Wind waves and tidal currents in San Francisco Bay cause naturally high levels of sediments in suspension, limiting ambient light penetration and phytoplankton production. In conditions typical of the project area, turbidity plumes would be quickly diluted to near or within background particulate concentrations, generally within the tens of milligrams per liter (mg/L) to upwards of 150 mg/L in the Central Bay, based on U.S. Geological Survey suspended sediment monitoring (USGS, 2012). Increased turbidity from dredging activities is expected to have negligible effect on plankton productivity in central San Francisco Bay.

Entrainment of Organisms

Fishes and invertebrates could be vulnerable to entrainment in dredging equipment, particularly hydraulic dredges. Dredging for the proposed project would be done with clamshell dredging equipment, which has a considerably lower likelihood of entraining fish, because fish have the ability to actively avoid the dredge bucket as it is lowered. Listed fish species, including Chinook salmon, steelhead, green sturgeon, and longfin smelt, do not spawn in the project area, but adults and juveniles can be present. It is expected that adults and juveniles would avoid the dredge bucket, and this impact would be negligible.

Disturbance to Benthic Organisms

Dredging would directly impact benthic communities through physical disruption and direct removal of benthic organisms, resulting in the potential loss of most, if not all, organisms in the dredged area. Following dredging, disturbed areas are recolonized, beginning with mobile and opportunistic species (Oliver et al., 1977; Lenihan and Oliver, 1995). These species, characterized by rapid growth and reproduction, may or may not be the same species that were present in the area prior to the disturbance. San Francisco Bay harbors more nonindigenous benthic invertebrate species than any other aquatic ecosystem in North America (Cohen and Carlton, 1995). The introduced species range from approximately 20 to 80 percent (Lee et al., 1999), depending on the area of San Francisco Bay; recolonization may include nonindigenous species already present in the area. The project is not expected to introduce any new nonindigenous species from outside San Francisco Bay, because construction equipment to be used in the water (such as dredging equipment) would not be imported from areas outside San Francisco Bay.

Historically, the benthic communities within the project area have been subject to periodic disturbance for the demolition, construction, and dredging of the Ferry Terminal and other facilities (e.g., the Bay Area Rapid Transit tube).[1] Initial dredging during construction would have a negligible effect on central San Francisco Bay benthic communities, due to the small area of dredging disturbance within an active ferry terminal. There are no state or federally listed benthic species in the project area.

NEPA Determination. The proposed project's construction dredging activities have the potential to adversely impact special-status and commercially valuable marine species. With implementation of Mitigation Measure BIO-1 and adherence to the requirements of NMFS' Biological Opinion, the impacts of construction dredging on special-status and commercially valuable marine species would be reduced, and would not be adverse.

WETA and FTA also have initiated consultation with NMFS under Section 7 of the FESA, and for EFH under the Magnuson-Stevens Fishery Conservation and Management Act. The Biological Assessment was submitted to NMFS for further action. FTA's Biological Assessment included the following conclusions:

- If dredging activities occur during the proposed work window between June 1 and November 30, the project may affect, but is not likely to adversely affect steelhead, Sacramento River winter-run Chinook salmon, and Central Valley spring-run Chinook salmon.

- If dredging activities occur outside of the proposed work window (i.e., between December 1 and May 31), the project is likely to adversely affect steelhead, Sacramento River winter-run Chinook salmon, and Central Valley spring-run Chinook salmon.

- Dredging activities for the project, regardless of timing, are likely to adversely affect green sturgeon.

With regard to designated critical habitat in the action area, for the purposes of the Biological Assessment, FTA has determined and WETA supports the determination that the project does not appreciably diminish the value of designated critical habitat for CCC and Central Valley steelhead, Sacramento River winter-run Chinook salmon, and green sturgeon. Therefore, the project may affect, but is not likely to adversely modify, the capability of designated critical habitat for these species to support the survival and recovery of the species. With regard to EFH in the action area, FTA has determined and WETA supports the determination that EFH may be disturbed due to dredging activities, which may adversely affect EFH for Pacific salmon species.

[1] Section 3.8, Cultural and Paleontological Resources, and Section 3.12, Hazards and Hazardous Materials, contain descriptions of the changes that have been made in the Ferry Terminal area over time, including the demolition of the old ferry docks, construction of the Bay Area Rapid Transit tube and Ferry Plaza, addition of Gates C and D, and the addition of Gates B and E in 2003. In addition, Pier ½ was demolished as a part of the America's Cup Project in October 2012.

However, the implementation of avoidance and minimization measures described in Mitigation Measure BIO-1 would minimize these potential effects. These avoidance and minimization measures, in combination with the ability of these species to move themselves out of the range affected by injury-causing noise and turbidity, would minimize the direct impacts on individuals, and thus on populations of the species. In addition, as described in more detail in the Biological Assessment, the potential impacts to species and their habitats (critical habitat and EFH) would be temporary and not likely to result in death of injury to individuals. The consultation process will be completed prior to the release of the Final EIS/EIR.

CEQA Determination. The proposed project's construction dredging activities have the potential to impact special-status and commercially valuable marine species. Mitigation Measure BIO-1 includes measures to reduce the impacts on special-status and commercially valuable marine species from construction dredging. Therefore, with implementation of Mitigation Measure BIO-1 and adherence to the requirements of NMFS' Biological Opinion, impacts from dredging during construction would be less than significant with mitigation.

Impact 3.9-5: Potential Adverse Effects to Special-Status Fish and Marine Mammals from Underwater Sound Generated During Pile Driving

Construction of the proposed project improvements would require pile-driving activities. Pile-driving activities for the proposed project include impact or vibratory pile driving associated with construction of the Gate A Access Pier, berthing structures, and the Embarcadero Plaza and East Bayside Promenade; as well as installation of a fendering "chock block" along Pier 1 and adjacent to Gates E, F, and G. Piles would be steel, concrete, or wood, depending on the application. Pile types, numbers, and sizes are described in Chapter 2.

Underwater sound and acoustic pressure resulting from pile driving could affect aquatic resources (e.g., fish and marine mammals) by causing behavioral avoidance of the construction area and/or injury to sensitive species.

Background underwater sound levels in the project area are considered in the assessment of the project's construction impacts. Underwater noise in the Ferry Terminal area is regularly generated by small- to medium-sized boats, including the existing water transit vessels. Based on the 2003 Water Transit Authority Programmatic EIR, underwater sound levels for water transit vessels ranged from 152 decibels (dB) to 177 dB (referenced at 1 microPascal at 1 meter) (WETA, 2003a). This data is similar to other accepted values for similarly sized vessels (Richardson, et al., 1995). Representative underwater noise levels for San Francisco Bay show that typical ambient noise levels are 120 dB with 133 dB root-mean-square (RMS), as measured in the Oakland Outer Harbor (Caltrans, 2009a). Based on this information, existing underwater background noise levels in the project area are expected to be 120 dB or greater.

Applicable Criteria for Fish

On July 8, 2008, the Fisheries Hydroacoustic Working Group (FHWG), whose members include NMFS' Southwest and Northwest Divisions; each of the departments of transportation for the states of California, Washington, and Oregon; CDFW; and the U.S. Federal Highway Administration, issued an agreement for the establishment of interim threshold criteria to determine the effects of high-intensity sound on fish (FHWG, 2008). Although these criteria are not formal regulatory standards, they are generally accepted as viable criteria for underwater noise effects on fish. Table 3.9-1, NMFS Underwater Noise Thresholds for Fish, shows the criteria that were established after extensive review of the most recent analyses of the effect of underwater noise on fish. The FHWG has determined that noise at or above a 206-dB peak level can cause damage to auditory tissues, the swim bladder, or other sensitive organs. The peak level is the maximum pressure produced by a sound event, such as a pile strike.

Table 3.9-1
NMFS Underwater Noise Thresholds for Fish

	Peak Noise (dB)	Accumulated Noise (SEL) (dB)
Impulse and Continuous Sound		
Fish under two grams in weight	>206	>183
Fish over two grams in weight	>206	>187

Source: (FHWG, 2008)

Notes:

> = greater than
dB = decibel
NMFS = National Marine Fisheries Service
SEL = sound exposure level

Additionally, FHWG determined that accumulated sound exposure levels (SELs) above 187 dB for large fish and 183 dB for larval fish (less than 2 grams body weight) are potentially detrimental. Although injury does not occur, noise levels above the accumulated SEL may cause temporary hearing-threshold shifts, which may result in temporary decrease in fitness, such as feeding ability. No federal or state threatened or endangered fish of less than 2 grams body weight would be present in the study area, and larvae of fish species important to EFH are not expected to occur in large numbers. Therefore, the 187-dB SEL threshold was used for this analysis to assess impacts to fish.

Behavioral effects, such as fleeing and the temporary cessation of feeding or spawning behaviors, could also result from underwater noise. However, the above criteria do not address these affects. In addition, a specific criterion has not yet been set by the FHWG for continuous noise, such as vibratory driving, so the same criteria as impulse-type noise are used.

Applicable Criteria for Marine Mammals

Levels of harassment for marine mammals are defined in the Marine Mammal Protection Act of 1972. Level A harassment is defined as "Any act of pursuit, torment, or annoyance which has the potential to injure a marine mammal or marine mammal stock in the wild." Level B harassment is defined as "Any act of pursuit, torment, or annoyance which has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including but not limited to migration, breathing, nursing, breeding, feeding or sheltering." Any activities that may result in harassment of marine mammals under these guidelines would require an Incidental Harassment Authorization from the NMFS.

For marine mammals, NMFS criteria define exposure to underwater sound pressure level from impulse sounds at or above 160 dB RMS[2] as constituting harassment to marine mammals. NMFS has determined that sound pressure levels above 190 dB RMS can cause temporary hearing impairment in marine mammals. NMFS also distinguishes between impulse sound—such as that from impact pile driving, and continuous sound—such as that from vibratory pile driving. Table 3.9-2, NMFS Level A and B Harassment Thresholds for Marine Mammals, shows the current Level A (injury) and Level B (disturbance) threshold levels for cetaceans (whales, dolphins, and porpoises) and pinnipeds (seals and sea lions) (NMFS, 2005).

[2] Root-mean-square measures the average noise energy measured over a 35-millisecond period. Note that this is a different type of measurement than the peak sound or sound exposure level used to measure impacts to fish (NOAA, 2012).

Table 3.9-2
NMFS Level A and B Harassment Thresholds for Marine Mammals

	Level A (dB RMS)	Level B (dB RMS)
Impulse Sounds (i.e., impact pile driver)		
Pinnipeds (seals, sea lions)	>190	160 – 190
Cetaceans (whales, dolphins, and porpoises)	>180	160 – 180
Continuous Sound (i.e., vibratory pile driver)		
Pinnipeds (seals, sea lions)	>190	120 – 190
Cetaceans (whales, dolphins, and porpoises)	>180	120 – 180

Source: NMFS, 2005

Notes:

Level A harassment is defined as injury
Level B harassment is defined as disturbance.

> = greater than
dB = decibel
NMFS = National Marine Fisheries Service
RMS = root-mean-square

Assessing Sound Levels from Project Construction

Reference sound levels were based on underwater sound measurements documented for a number of pile-driving projects with similar pile sizes and types at similar sites (i.e., estuarine areas of soft substrate where water depths are less than 16 feet [Caltrans, 2009a]). The noise energy would dissipate as it spreads from the pile at a rate of roughly 4.5 dB per doubling of distance (Caltrans, 2009a). This is a conservative value for areas of shallow water with soft substrates, and actual dissipation rates would likely be higher. Using this information, and the number and size of piles presented in Chapter 2, underwater sound levels were estimated to determine whether the thresholds described above would be exceeded. Results are shown in Table 3.9-3.

As shown in Table 3.9-3, pile-driving activities would exceed levels that would cause injury to fish (206 dB peak) for impact driving of steel piles at distances of 22 feet for 24-inch piles, 43 feet for 36-inch piles, and up to 57 feet for the largest (42-inch) piles for the berthing structure. Vibratory driving of steel or wood piles and impact driving of concrete or wood piles would not generate sound levels in excess of the 206-dB level that could cause injury. Within the distances shown in Table 3.9-3, fish may be exposed to sound levels above the 187-dB SEL threshold, which may result in temporary reduction of hearing capacity or temporary changes in behavior, but would not be expected to cause injury or mortality.

Similarly, impact driving of steel piles would exceed levels that would cause injury (Level A harassment) to seals and sea lions (190 dB RMS) within about 33 to 65 feet of the pile, depending on pile size. The analysis indicates that the Level A threshold for cetaceans (i.e., whales and dolphins) would be exceeded at distances of up to 252 feet of impact pile driving of steel piles. However, it is unlikely that whales or other cetaceans would enter the Ferry Terminal area in such close proximity to the project construction activities.

Marine mammals may be exposed to levels exceeding the Level B harassment guidelines (160 dB for impact pile driving and 120 dB for vibratory piles driving) over the distances displayed in Table 3.9-3. For impact pile driving, the Level B thresholds could be exceeded within 1,920 to 3,779 feet of pile-driving activities for steel piles. Impact driving of concrete piles, if used, would produce lower sound

Table 3.9-3
Calculated Distance (feet) from Pile Where Sound Threshold Would Be Exceeded

Project Element Requiring Pile Installation[2]	Thresholds for Fish[1]		Thresholds for Marine Mammals[2]			
	206 dB Peak Noise	187 dB SEL	180 dB RMS Level A Harassment of Whales, Dolphins, and Porpoises (Cetaceans)	190 dB RMS Level A Harassment of Seals and Sea Lions (Pinnipeds)	160 dB RMS Level B Harassment of Cetaceans and Pinnipeds Impact Pile Driving	120 dB RMS Level B Harassment of Cetaceans and Pinnipeds Vibratory Pile Driving
South Basin Circulation Improvements[2]						
24" Concrete Piles – Impact Driver	Not exceeded over any distance	263 feet	17 feet	Not exceeded over any distance	252 feet	N/A
24" Steel Piles – Vibratory Driver	Not exceeded over any distance	105 feet	Not exceeded over any distance	Not exceeded over any distance	N/A	11,167 feet
24" Steel Piles – Impact Driver	22 feet	1,530 feet	128 feet	33 feet	1,920 feet	N/A
36" Steel Piles – Vibratory Driver	Not exceeded over any distance	344 feet	Not exceeded over any distance	Not exceeded over any distance	N/A	28,820 feet
36" Steel Piles – Impact Driver	43 feet	1,580 feet	128 feet	50 feet	2,882 feet	N/A
Gate A Access Pier[2]						
24" Concrete Piles – Impact Driver	Not exceeded over any distance	263 feet	17 feet	Not exceeded over any distance	252 feet	N/A
24" Steel Piles – Vibratory Driver	Not exceeded over any distance	105 feet	Not exceeded over any distance	Not exceeded over any distance	N/A	11,167 feet
24" Steel Piles – Impact Driver	22 feet	1,530 feet	128 feet	33 feet	1,920 feet	N/A
36" Steel Piles – Vibratory Driver	Not exceeded over any distance	344 feet	Not exceeded over any distance	Not exceeded over any distance	N/A	28,820 feet
36" Steel Piles – Impact Driver	43 feet	1,580 feet	128 feet	50 feet	2,882 feet	N/A

Table 3.9-3
Calculated Distance (feet) from Pile Where Sound Threshold Would Be Exceeded (Continued)

Project Element Requiring Pile Installation[2]	Thresholds for Fish[1]		Thresholds for Marine Mammals[2]			
	206 dB Peak Noise	187 dB SEL	180 dB RMS Level A Harassment of Whales, Dolphins, and Porpoises (Cetaceans)	190 dB RMS Level A Harassment of Seals and Sea Lions (Pinnipeds)	160 dB RMS Level B Harassment of Cetaceans and Pinnipeds Impact Pile Driving	120 dB RMS Level B Harassment of Cetaceans and Pinnipeds Vibratory Pile Driving
Berthing Structure Guide Piles						
42" Steel Piles – Vibratory Driver	Not exceeded over any distance	612 feet	Not exceeded over any distance	Not exceeded over any distance	N/A	43,270 feet
42" Steel Piles – Impact Driver	57 feet	2,372 feet	252 feet	65 feet	3,779 feet	N/A
Berthing Structure Dolphin Piles						
36" Steel Piles – Vibratory Driver	Not exceeded over any distance	344 feet	Not exceeded over any distance	Not exceeded over any distance	N/A	28,820 feet
36" Steel Piles – Impact Driver	43 feet	1,580 feet	128 feet	50 feet	2,882 feet	N/A
Fendering (Wood Piles – Vibratory or Impact Driver)	Not exceeded over any distance	Not exceeded over any distance	Not exceeded over any distance	Not exceeded over any distance	Not exceeded over any distance	650 feet

Notes:

"NA" indicates that this threshold does not apply for the installation method of the pile type.

The dimensions presented before the pile type indicates the diameter of the pile for which sound levels were calculated.

[1] As established by the FHWG (FHWG, 2008)
[2] For the South Basin Circulation Improvements and Gate A Access Pier, piles could be either concrete and installed by impact pile driving, or steel and be installed by impact or vibratory driving. Both options are evaluated.

dB = decibel
FHWG = Fisheries Hydroacoustic Working Group
RMS = root-mean-square
SEL = sound exposure level

levels, and a radius of Level B harassment of about 252 feet. For vibratory pile driving of steel piles, the Level B thresholds could be exceeded at greater distances from the project site. However, as discussed above, existing ambient underwater noise levels in the project area are expected to be 120 dB or greater, which is the same as the threshold level. Marine mammals would not be affected by the underwater noise generated during construction in areas where the ambient noise levels are the same as or greater than the construction noise levels.

To minimize the effect of project construction noise on fish and marine mammals (i.e., avoidance behavior, fleeing responses, temporary hearing impairment, or the temporary cessation of feeding), Mitigation Measures BIO-1 and BIO-2 will be implemented. Mitigation Measure BIO-1 would reduce the construction noise impacts to sensitive life stages of listed salmonids by requiring that pile driving be conducted between June 1 and November 30, if feasible. In addition, Mitigation Measure BIO-2 requires that hydroacoustic and biological monitoring for fish and marine mammals be conducted during construction, and that corrective measures be implemented, in coordination with NMFS, if underwater sound levels exceed the threshold in this analysis.

NEPA Determination. Underwater sound levels from pile driving during construction could adversely affect fish and marine mammals. With implementation of Mitigation Measures BIO-1 and BIO-2, and adherence to the requirements of NMFS' Biological Opinion, these impacts would be reduced and would not be adverse.

WETA and FTA have also initiated consultation with NMFS under Section 7 of the FESA, and for EFH under the Magnuson-Stevens Fishery Conservation and Management Act. The Biological Assessment was submitted to NMFS for further action. FTA's Biological Assessment included the following conclusions:

- If pile-driving activities occur during the proposed work window between June 1 and November 30, the project may affect, but is not likely to adversely affect steelhead, Sacramento River winter-run Chinook salmon, and Central Valley spring-run Chinook salmon.

- If pile-driving activities occur outside of the proposed work window (i.e., between December 1 and May 31), the project is likely to adversely affect steelhead, Sacramento River winter-run Chinook salmon, and Central Valley spring-run Chinook salmon.

- Pile-driving for the project, regardless of timing, are likely to adversely affect green sturgeon.

With regard to designated critical habitat in the action area, for the purposes of the Biological Assessment, FTA has determined and WETA supports the determination that the project does not appreciably diminish the value of designated critical habitat for CCC and Central Valley steelhead, Sacramento River winter-run Chinook salmon, and green sturgeon. Therefore, the project may affect, but is not likely to adversely modify, the capability of designated critical habitat for these species to support the survival and recovery of the species. With regard to EFH in the action area, FTA has determined and WETA supports the determination that although only in the short term and only during construction activities, the project may adversely affect EFH in the action area through the noise-related impacts and disturbance due to pile driving.

However, the implementation of avoidance and minimization measures described in Mitigation Measures BIO-1 and BIO-2 would minimize these potential effects. These avoidance and minimization measures, in combination with the ability of these species to move themselves out of the range affected by injury-causing noise and turbidity, would minimize the direct impacts on individuals, and thus on populations of the species. In addition, as described in more detail in the Biological Assessment, the potential impacts to species and their habitats (critical habitat and EFH) would be temporary and not

likely to result in death of injury to individuals. The consultation process will be completed prior to the release of the Final EIS/EIR.

CEQA Determination. Underwater sound levels from pile driving during construction could exceed thresholds for both injury and behavioral effects on fish and marine mammals. Injury thresholds would be exceeded primarily during impact driving of steel piles (impact driving of concrete pile would only exceed criteria for whales and dolphins, over a small distance [15 feet] from the pile). Mitigation Measures BIO-1 and BIO-2 would be implemented. Mitigation Measure BIO-1 would reduce the construction noise impacts to sensitive life stages of listed salmonids by requiring that pile driving be conducted between June 1 and November 30, if feasible. In addition, Mitigation Measure BIO-2 requires that hydroacoustic and biological monitoring for fish and marine mammals be conducted during construction, and that corrective measures be implemented, in coordination with NMFS, if underwater sound levels exceed the threshold in this analysis. Therefore, with implementation of Mitigation Measures BIO-1 and BIO-2, and adherence to the requirements of NMFS' Biological Opinion, impacts to fish and marine mammals from underwater sound would be less than significant with mitigation incorporated.

Impact 3.9-6: Interference with the Movement of Resident or Migratory Fish or Wildlife Species During Construction

The Action Alternative would involve the demolition and removal of existing piers, and the installation of additional in-water and over-water structures. The noise and in-water disturbance associated with these activities could cause fish and wildlife species to temporarily avoid the immediate construction area when work is being conducted.

The proposed project location is in the Central Bay, which is a major corridor used by fish and marine mammals as they move between different habitats in San Francisco Bay and open ocean. However, the affected area would be limited to the immediate construction zone, and would not substantially limit the available habitat or movement of fish, seabirds, or marine mammals in San Francisco Bay if these animals avoid the immediate construction area.

NEPA Determination. The project would not adversely impact the movement or migration of fish or wildlife species during construction.

CEQA Determination. The project's potential to impact the movement or migration of fish or wildlife species during construction would be less than significant.

Cumulative Impacts

Impact 3.9-7. Potential to Result in Cumulative Impacts on Biological Resources

The geographic area of potential biological cumulative impacts is central San Francisco Bay.

The proposed project could result in adverse biological effects related to construction activities in the waters of San Francisco Bay due to dredging and noise from construction activities. Other projects along the waterfront, such as the America's Cup Project, Port of San Francisco maintenance dredging, the Bay Bridge Seismic Safety Project, the Pier 36/Brannan Street Wharf Project, and the Pier 15 to 17 Exploratorium Relocation Project, could involve activities similar to the proposed Ferry Terminal modifications that could also affect biological resources in central San Francisco Bay. The in- and over-water construction activities associated with these projects could result in adverse cumulative impacts related to underwater noise and the adverse impacts associated with dredging (e.g., disruption of bottom sediments, increases in turbidity, disturbance of benthic habitat, temporary loss or reduction of habitat suitable for sensitive fish species,

mortality of fishes from entrainment in dredging equipment, or alteration of behavior of marine mammals).

Construction activities for each project would be temporary, and it is unlikely that construction on the various projects listed above would occur simultaneously with the proposed project construction activities. WETA would comply with existing regulations, requirements, and conditions in permits from the Corps, NMFS, RWQCB, CDFW, and BCDC for dredging and underwater noise impacts (see Section 3.11, Hydrology and Water Quality, and Section 3.12, Hazards and Hazardous Materials), which would minimize and/or avoid adverse impacts associated with dredging. In addition, WETA would implement Mitigation Measures BIO-1 and BIO-2 to further reduce dredging and underwater noise impacts. For these reasons, the project's contribution to adverse cumulative construction impacts to biological resources would not be cumulatively considerable.

The proposed project's maintenance dredging and placement of permanent fill in San Francisco Bay could also have an adverse effect on biological resources. Other projects along the waterfront, such as the America's Cup Project, Port of San Francisco maintenance dredging, the Bay Bridge Seismic Safety Project, the Pier 36/Brannan Street Wharf Project, and the Pier 15 to 17 Exploratorium Relocation Project, could also affect biological resources in central San Francisco Bay similarly (with the need for ongoing dredging or the placements of permanent fill). These activities could cumulatively impact biological resources by impacting water quality, increasing shading, and increasing permanent fill in central San Francisco Bay. The increase in permanent fill could impact benthic habitat, affecting EFH and marine species. An increase in shading can alter the remaining habitat and the composition of species that use the habitat. In 2010, approximately 2,000,000 cubic yards of material was dredged for maintenance dredging projects in San Francisco Bay (DMMO, 2011). Maintenance dredging activities for the project would be small and infrequent (5,000 to 10,000 cubic yards of material every 3 or 4 years) in comparison to the ongoing maintenance dredging programs in San Francisco Bay. In addition, WETA would comply with existing regulations, requirements, and conditions in permits from the Corps, NMFS, RWQCB, CDFW, and BCDC for dredging (see Section 3.11, Hydrology and Water Quality, and Section 3.12, Hazards and Hazardous Materials), which would minimize and/or avoid adverse impacts associated with dredging. In addition, WETA would implement Mitigation Measures BIO-1, further reducing dredging impacts. Therefore, the proposed project's contribution to cumulative dredging impacts would not be considerable.

Fill within the terminal area, including shading, is small relative to surrounding open areas of San Francisco Bay. Although the increase in project-related fill would combine with fill associated with other projects and result in a cumulative increase of fill in San Francisco Bay, the amount of fill for the proposed project would be small and placed in an area that is already substantially altered by Ferry Terminal facilities, and therefore less likely to affect habitat, species, and species behavior. Therefore, the fill from the proposed project would not be considered cumulatively considerable.

The proposed project would not result in adverse effects related to fill in, or disturbance of, special aquatic sites; movement of migratory species; or conflicts with any Habitat Conservation Plans or other natural community conservation plans. Therefore, the project would not contribute to cumulative effects related to these biological resources.

NEPA Determination. The proposed project, in combination with other reasonably foreseeable projects in central San Francisco Bay, has the potential to adversely cumulatively impact biological resources. However, the project's contribution to cumulative biological impacts would not be considerable.

CEQA Determination. The proposed project, in combination with other reasonably foreseeable projects in central San Francisco Bay, has the potential to cumulatively impact biological resources. However, the project's contribution to cumulative biological impacts would not be considerable, and therefore would be less than significant.

3.9.4 Mitigation Measures

Mitigation Measure BIO-1: Dredging and Pile-Driving Measures

The following measures will be implemented to reduce the impacts of dredging and pile driving on special-status fish and other aquatic species:

- During impact pile driving of steel piles, the applicant will use a bubble curtain or other attenuation device to attenuate underwater sound levels;
- Impact hammers will be cushioned using a 12-inch-thick wood cushion block;
- Only a single impact hammer will be operated at a time; and
- If a mechanical dredge is used, the applicant will use the smallest possible dredge head to reduce the likelihood of fish becoming entrained in the mechanical dredge.

WETA plans to conduct all piling installation and dredging between approved work windows, between June 1 and November 30, when the likelihood of sensitive fish species being present in the work area is minimal (LTMS, 1998).

Until Final Design is completed and a contractor is selected, WETA will not be able to make a final determination as to whether piling installation or dredging must occur at times other than the approved work window. In addition, factors beyond WETA's control, such as requirements of other agencies or conflicting timing requirements, may prevent WETA from conducting all piling installation and dredging within the approved work window.

The project sponsors will undertake formal FESA and CESA consultation with NOAA, NMFS, and CDFW to identify avoidance and minimization methods that will be implemented to reduce effects on sensitive marine resources. Methods may include monitoring by a qualified biologist, and halting of dredging or pile-driving activities for a specific period if spawning activity is noted within the construction area. In addition to the avoidance and minimization measures identified here, the project sponsors will comply with additional measures and requirements identified through consultation with NOAA, NMFS and CDFW.

Mitigation Measure BIO-2: Hydroacoustic and Biological Monitoring and Avoidance Measures

WETA will minimize sound level exposure from the project to marine mammals and fish. The performance standards for these minimization efforts are described later in this measure. To provide the final implementation level details, WETA will develop a Hydroacoustic and Biological Monitoring Plan in consultation with NMFS, prior to the start of construction. This plan will provide detail on the methods used to monitor and verify sound levels during pile-driving activities. The plan will include specific measures to minimize exposure of marine mammals and fish to high sound levels. At a minimum, avoidance and minimization measures will meet the following performance standards, and will include the following methods:

- Underwater noise levels will be measured during pile-driving activities to determine the distance at which sound levels do not exceed injury thresholds for fish (206 dB) or marine mammals (Level A thresholds [180 dB RMS or 190 dB RMS]).
- A "soft start" technique shall be employed in all pile driving to give marine mammals an opportunity to vacate the area.

- If an activity produces underwater sound levels that exceed injury the threshold for fish or marine mammals, work will be stopped and sound levels will be reduced through noise control measures such as the installation of NMFS-approved attenuation devices (e.g., bubble curtains) or modification of construction methods (such as using cushioning between the hammer and pile).

- An NMFS-approved biological monitor will monitor the installation of at least 10 percent of the 24- to 42-inch-diameter steel piles that will be installed by impact hammer. During initial impact pile-driving efforts, a default exclusion zone at a distance of 500 feet from the pile will be monitored for the presence of marine mammals. The area will be monitored for 30 minutes prior to impact driving. No driving will be conducted until the area has been free of marine mammal sightings for 30 minutes. If no marine mammals are sighted, driving will begin, and hydroacoustic monitoring will be conducted.

3.10 AESTHETICS AND VISUAL RESOURCES

3.10.1 Introduction to the Analysis

This section describes the existing aesthetics and visual resources in the study area and the project area, as well as views of and views from the project area to the surrounding San Francisco waterfront. The section also describes the state, regional, and local regulatory framework and policies that would apply to the project. Potential impacts related to the blocking of views, addition of light and glare, and changes to the visual character of the study area are addressed. As described below, the project alternatives would not result in adverse changes to the study area that would be substantial or significant. No mitigation would be necessary.

3.10.2 Affected Environment

This section describes existing aesthetics and visual resources in the study area, and also provides a regulatory framework describing applicable policies and plans relevant to these resources.

Existing Setting

Study Area

The study area for the aesthetics and visual resources analysis includes the project area, as well as those publicly accessible areas in the project vicinity where the proposed project improvements would be visible. The project area extends from Pier 1 on the north to Pier 14 on the south, from The Embarcadero on the west to San Francisco Bay on the east, and includes the San Francisco Ferry Building (Ferry Building), water transit gates, and the Agriculture Building. The publicly accessible areas in the study area include open areas within the project area (such as along the perimeter of the Ferry Building), the sidewalks and open spaces generally to the west of the project area, and San Francisco Bay.

Character of the Waterfront

The San Francisco waterfront defines the urban edge of the eastern and northern portions of the City and County of San Francisco (CCSF). Although the downtown area is dominated by high-rise buildings, the area closest to the water and in the study area is characterized by smaller-scale commercial structures and large open spaces, such as Justin Herman Plaza.

The overall character of the waterfront is generally characterized by bulkhead buildings and piers, with maritime and other uses, parking areas, and open spaces. The bulkhead buildings and piers are the primary visual elements along the waterfront, their spacing broken up by open spaces that invite public use and provide scenic views of San Francisco Bay. The buildings in the study area represent a mixture of modern and historic elements. Modern buildings and elements (e.g., Sinbad's restaurant on Pier 2, and the water transit gates) are located alongside historic buildings (e.g., the Agriculture Building, Ferry Building, and Pier 1). The visual elements of The Embarcadero and Embarcadero Promenade[1] create a well-defined linear element that provides visual continuity along the waterfront.

The Embarcadero extends for 3 miles along the waterfront, and features specifically designed amenities, including lamp posts, bollards, streetcar platforms and shelters, sidewalks with decorative pavers, and the Art Ribbon—consisting of concrete blocks that contain a continuous band of light following the path of the Embarcadero Promenade. The amenities comprise complimentary colors, materials, and styles that provide visual continuity and connections among the different facilities and uses along The Embarcadero/ Embarcadero Promenade. The waterfront along The Embarcadero is generally devoid of vegetation;

[1] "The Embarcadero" generally refers to the roadway, and "the Embarcadero Promenade" refers to the 25-foot-wide pedestrian promenade on the water side of The Embarcadero.

however, pockets of park-like open space are occasionally interspersed among maritime and transportation uses. The median and perimeter of the roadway include rows of ornamental palm trees.

As described in more detail in Section 3.4, Parklands and Recreation, to the west of the project area are three public open spaces: Harry Bridges Plaza, Justin Herman Plaza, and Sue Bierman Park. Harry Bridges Plaza is a paved area between the north- and southbound lanes of The Embarcadero. To the west and northwest of Harry Bridges Plaza, grass and trees planted in Justin Herman Plaza and Sue Bierman Park soften the concrete façades and sharp angles of nearby structures in the project area, and of the high-rise buildings in the Financial District and the South of Market Area.

The primary visual element in the study area is the Ferry Building, which dominates the view from within the project area and areas surrounding the project site. Its iconic presence is described in the Waterfront Design and Access Element as the "focal point of this area and indeed, the centerpiece of the Waterfront" (Port, 2004). The placement and design of the businesses and outdoor amenities that occupy the ground level of the Ferry Building add texture and color, contrasting with the austere and monumental quality of the building's façade. The Ferry Building is in the Beaux Arts style, and was completed in 1892. The Ferry Building currently operates as a mixed-use retail and office building, encompassing office space, retail marketplace space, open-air cafes, and restaurants. In addition, on Tuesdays and Saturdays, the Ferry Plaza Farmers Market temporarily occupies the open spaces in front of the Ferry Building; and on Saturdays, it also occupies the Ferry Plaza.

Figure 3.10-1, Views 1 and 2, generally show the aesthetics of the study area.

Views

From the east, the project site can be seen from Treasure Island, Yerba Buena Island, and from the upper deck of the Bay Bridge, as well as from boats on San Francisco Bay. These views from the east encompass the piers and commercial structures on both sides of the Ferry Building, whose clock tower visibly punctuates the low San Francisco skyline (see Figure 3.10-1, View 2). Depending on the distance from the project area, the low profile buildings and structures in the project area are only barely visible against the San Francisco skyline (as shown in Figure 3.10-1, View 2). However, as the viewer approaches the project area, the views from this perspective are framed on the south by the distinctive red brick and Mediterranean style of the Agriculture Building and the Pier 14 breakwater, and on the north by Pier 1, which together visually enclose the basins housing the water transit gates. Surrounding the study area is a mix of urban landscapes where building heights taper, heading north toward Telegraph Hill; and contain a variety of heights heading south toward the Bay Bridge (Figure 3.10-1, View 2).

Views of the project area from the west, from Justin Herman Plaza, Market Street or Harry Bridges Plaza, contain the visual elements of the Ferry Building, the Agriculture Building, Pier 1, The Embarcadero, the Embarcadero Promenade, and passing vehicles and pedestrians (Figure 3.10-1, Views 3, 4, and 5). Views of the project site from Market Street are influenced by the Ferry Building, which serves as the visual focal point for views down this corridor. As the viewer moves south toward Mission Street along Steuart Street, Gate E, the Agriculture Building, Sinbad's Restaurant on Pier 2, and San Francisco Bay become visible. The majority of these views are partially obstructed by physical objects typical of the urban landscape, including signs, lamp posts, overhead utilities, streetscape decorative features, street trees, and pedestrian and transit facilities. Views at street level can become temporarily obstructed by traffic operating along The Embarcadero. Looking from Justin Herman Plaza toward The Embarcadero and project site, some existing views to the water are obstructed by buildings. Due to the low height of the Agriculture Building, views also include the Bay Bridge and East Bay hills in the distance.

South of the Ferry Building, the view to the southeast opens to the Agriculture Building, spanning an open-water area (Figure 3.10-1, View 8). Walkways around the open-water area provide access to Pier 2

View 1: View of the study area, looking east.

View 2: Looking west from the San Francisco Bay, Ferry Building is in the foreground.

VIEWS 1 AND 2 OF THE PROJECT STUDY AREA

Downtown San Francisco
Ferry Terminal Expansion Project
28067812 San Francisco, California

FIGURE 3.10-1 (SHEET 1 OF 5)

View 3: Looking east from the median of The Embarcadero toward the North Basin, Gate B, and the Bay Bridge.

View 4: View of the South Basin looking east across The Embarcadero toward the Agriculture Building and Ferry Building.

VIEWS 3 AND 4 OF THE PROJECT STUDY AREA

Downtown San Francisco
Ferry Terminal Expansion Project
28067812 San Francisco, California

Note: The America's Cup project has removed all of Pier 1/2 and will remove the building located on Pier 2 prior to project construction.

FIGURE 3.10-1 (SHEET 2 OF 5)

View 5: Looking east on Market Street across Harry Bridges Plaza and The Embarcadero to the Ferry Building.

View 6: View from the north side of the Ferry Building looking north across the North Basin.

Note: The America's Cup project has removed all of Pier 1/2 and will remove the building located on Pier 2 prior to project construction.

VIEWS 5 AND 6 OF THE PROJECT STUDY AREA

Downtown San Francisco
Ferry Terminal Expansion Project
28067812 San Francisco, California

FIGURE 3.10-1 (SHEET 3 OF 5)

View 7: View from the Ferry Building promenade near Gate B looking southeast toward the East Bay hills. Gates C and D are in the foreground.

View 8: View looking south from the south side of the Ferry Building toward the Agricultural Building.

VIEWS 7 AND 8 OF THE PROJECT STUDY AREA

Downtown San Francisco
Ferry Terminal Expansion Project
28067812 San Francisco, California

FIGURE 3.10-1 (SHEET 4 OF 5)

View 9: View from the Ferry Plaza looking south toward Pier 2 (blue building on left) and the Bay Bridge. Agriculture Building is the brick building on the right.

View 10: View from the Ferry Plaza looking north toward Telegraph Hill. Gates C and D in the foreground.

Note: The America's Cup project has removed all of Pier 1/2 and will remove the building located on Pier 2 prior to project construction.

VIEW 9 OF THE PROJECT STUDY AREA

Downtown San Francisco
Ferry Terminal Expansion Project
28067812 San Francisco, California

FIGURE 3.10-1 (SHEET 5 OF 5)

and Gate E, both between the Ferry Building and Agriculture Building (Figure 3.10-1, View 9); the Bay Bridge is visible in the distance. Looking south from the Ferry Plaza area, the view of waterfront walkways and open spaces south of Mission Street is generally obstructed by the Agriculture Building, but is visible from various vantage points in the Ferry Plaza. Looking north from the Ferry Plaza, views include the existing water transit gates in the foreground and Telegraph Hill in the distance (Figure 3.10-1, View 10).

Existing Lighting of the Project Area

Within the project area, the open spaces and walkways leading to the existing gates are lit by regularly spaced vertical light standards, as well as old-fashioned street lamps. Additional lighting emanates from the Ferry Building and from external fixtures that either extend over adjacent pedestrian areas, or are recessed into the overhangs on the western side of the Ferry Building. All modern outdoor lighting fixtures and lighting standards are directed down, minimizing glare. Gates B and E contain internal lighting fixtures that project light onto the roof of the berthing structure, creating a vibrant glow for water transit passengers, while enhancing pedestrian safety and security. Lighting along The Embarcadero illuminates the roadway and sidewalks on the western side of the Ferry Building, and spills into and contributes to the luminescence of the pedestrian areas north and south of the Ferry Building.

Regulatory Setting

No federal regulations pertain to visual resources in the study area.

State

California's Scenic Highway Program was created by the state legislature in 1963. Its purpose is to protect and enhance the natural scenic beauty of California highways and adjacent corridors, through special conservation treatment. The scenic highway program consists of eligible and officially designated routes. A highway may be designated as eligible for listing as a state scenic highway if it offers travelers scenic views of the natural landscape, largely undisrupted by development. Eligible routes advance to officially designated status when the local jurisdiction adopts ordinances to establish a scenic corridor protection program, and receives approval from the California Department of Transportation. In San Francisco, Interstate 80 and Highway 1 are designated as eligible state scenic highways. Interstate 80, the closest eligible state scenic highway to the project, is approximately 1,800 feet south of the project site.

Regional

San Francisco Bay Conservation and Development Commission Public Access Design Guidelines and Bay Plan

The San Francisco Bay Conservation and Development Commission (BCDC) is charged with maintaining public access, including visual public access (i.e., views to San Francisco Bay from other public spaces) within its jurisdiction. Visual access can be achieved through thoughtful site planning and design, including building massing, to enhance San Francisco Bay sight lines and views. BCDC developed public access objectives in the Shoreline Space Public Access Design Guidelines (BCDC, 2005), to provide, maintain, and enhance visual access to and visual quality of San Francisco Bay and shoreline. These policies encourage shoreline development that would allow San Francisco Bay views and access between buildings, by locating buildings, structures, parking lots, and landscaping of new shoreline projects in ways that enhance and dramatize views of San Francisco Bay and the shoreline from public thoroughfares and other public spaces. The visual quality of any shoreline development proposal should relate directly to a set of site-specific factors. Incorporating design principles such as human scale, architectural diversity, and varied building massing can lead to well-designed waterfront buildings and shoreline access areas. The design character of public access areas should relate to the scale and intensity

of the proposed development. The objectives related to visual access and visual quality may be accomplished by providing visual interest and architectural variety in massing and height to new buildings along the shoreline, and/or using forms, materials, colors, and textures that are compatible with San Francisco Bay and adjacent development. In addition, BCDC's Bay Plan specifies that diverse views of San Francisco Bay, CCSF, and the waterfront should be provided at frequent intervals along The Embarcadero, from public plazas, and public piers (BCDC, 2008). The Bay Plan requires that every effort be made to provide, enhance, and preserve views of San Francisco Bay and the shoreline, especially those views from public areas and from San Francisco Bay.

Local

San Francisco General Plan

The San Francisco General Plan Urban Design Element (CCSF, 1998) provides policies and objectives to guide urban design decisions, including aesthetics. The Urban Design Element calls for preserving and enhancing views and visual quality, as well as for new development to complement existing patterns of development. In addition, the General Plan states that access to San Francisco Bay should be considered as a total system that includes physical contact with the water and the shore, and visual contact through views of the water and water-related activities.

Northeastern Waterfront Area Plan. The Northeastern Waterfront Area Plan, an element of the General Plan, provides specific objectives and policies for the Northeastern Waterfront to enhance its unique aesthetic qualities and its historic maritime character. Policies of the Northeastern Waterfront Area Plan call for maintaining low structures near the water, and increasing vertical development toward downtown, preserving and creating view corridors toward the Piers 1 to 5 bulkhead buildings, preserving the prominence of the Ferry Building, and removing surface parking along The Embarcadero.

Port of San Francisco Waterfront Land Use Plan

The study area is within the Ferry Building Subarea of the Port of San Francisco (Port) Waterfront Land Use Plan. This area extends from Pier 5 to Pier 22, and includes, from north to south, Pier 1½, Pier 1, Pier ½, the Ferry Building and the Ferry Plaza, Pier 2, and the Agriculture Building. The Waterfront Design and Access Element is a component of the Waterfront Land Use Plan, and is intended to guide the physical form of waterfront revitalization. The Waterfront Design and Access Element provides policy for the preservation and development of public access and open space, views, and historic resources, as well as architectural design criteria to be applied to new development. The Waterfront Design and Access Element contains objectives to maintain existing building height and bulk limitations, provide visual and physical access to San Francisco Bay, and protect and frame near and distant views to and from San Francisco Bay, particularly along major CCSF streets. Specifically, Port design guidelines call for new construction to be low-scale to protect views, and to maintain the visual character and design of existing maritime uses.

Port of San Francisco Waterfront Land Use Plan Design and Access Element. The Waterfront Design and Access Element addresses the nature of public access and open spaces along the waterfront. It includes special emphasis on public access and open spaces, and provides design criteria for the Port Walk, which creates continuous waterfront pedestrian access from the Embarcadero Promenade south of the Agriculture Building to the southern edge of Pier 1.

The project site is in the Ferry Building Subarea of the Design and Access Element of the Waterfront Land Use Plan. The overarching goal of the plan is to reunite the City with a continuously accessible waterfront. The plan contains policies for the historic preservation of the Ferry Building and its adaptive reuse; support of the Ferry Building's prominence as a civic focal point on the waterfront; and preservation of views of the historic buildings on streets connecting the city to the waterfront. Policies

support the connection of open spaces at the Ferry Building with nearby Justin Herman Plaza and Rincon Park; the design of Ferry Building open spaces to reflect the civic character already established by the Ferry Building, Agriculture Building, and bulkhead buildings; and the provision of connections to open-water areas.

The plan contains specific design criteria for the Ferry Plaza, which includes areas next to and behind the Ferry and Agriculture Buildings and Pier ½. The project site is in the Ferry Plaza area. Design criteria for this area are listed below.

Site

Massing: New Downtown San Francisco Ferry Terminal (Ferry Terminal) structures should not detract from the character of the Ferry Building and its dominance in the area.

Open Water: Ends of Ferry Building: Limit new structures to the minimum necessary to serve ferry passengers and excursion patrons, to maintain views from The Embarcadero to San Francisco Bay. Remove that portion of Pier ½ not required for a vessel berthing facility and public access, and the northern portion of Pier 2, and locate water and boating uses as close to the Embarcadero Promenade as feasible in the Pier ½ area.

Views: Ends of Ferry Building – Remove Pier ½ parking and relocate the Pier 2 restaurant structure to enhance views of San Francisco Bay and boating activity from The Embarcadero.

Pier Shape: Limit changes to pier shape, if any, to those that allow waterside public access improvements, or accommodate ferry and maritime operations.

Orientation

Orientation: Activate the Ferry Plaza by allowing surrounding commercial and other uses to spill out onto the Ferry Plaza, provided they are compatible with ferry operations and the Ferry Plaza's function as a public space.

Edge: Water Side of the Ferry Building – Provide public access on the water side of the Ferry Building (appropriately scaled to the Ferry Building) and on breakwaters throughout the Ferry Terminal area, while also providing for ferry and excursion boat queuing.

Architectural Details

Character: New Development – The architectural character of any new development should be compatible with the scale, proportions, materials, colors, and rhythm of openings of adjacent historic structures.

Character: Ferry Plaza – Use pavement surfacing to reinforce pedestrian uses as the dominant use, although areas may be shared with vehicle circulation.

Public Improvements: New railings and urban furniture should reflect the civic character of the Ferry Building.

Service

Trash Enclosures: Locate trash facilities within structures.

Designated or Eligible Scenic Roads

In 1938, San Francisco Downtown Association created the 49-mile Scenic Drive to highlight San Francisco's scenic beauty. The route passes through the study area along The Embarcadero. Although there are no associated plans or policies related to the Scenic Drive, streets the route follows are recognized for their aesthetic value.

3.10.3 Impact Evaluation

The analysis considered whether the project would:

- Create a substantial adverse effect on a scenic vista;
- Substantially damage scenic resources, including (but not limited to) trees, rock outcroppings, and other features of the built or natural environment that contribute to a scenic public setting;
- Substantially degrade the existing visual character or quality of the site and its surroundings;
- Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area, or that would substantially affect other people or properties; or
- Substantially contrast with the scale or visual context of the surrounding landscape.

Alterations to the study area viewshed were assessed. Views and vistas to and from the study area were evaluated based on site visits, through use of photographs of the existing setting, and through renderings and descriptions of the proposed project. The renderings show how the height, bulk, texture, and design of proposed facilities would relate to what exists today. Impacts to San Francisco Bay views and views of the project area from the surrounding area were examined, including impacts related to light and glare emanating from new project-related facilities; view alteration for pedestrians, bicyclists, and users of public open space along the waterfront; and changes in landscaping and urban design as a result of the project. Attention was given to potential impacts of the project on San Francisco Bay, a scenic vista in the project area. Changes or alterations to the view, building character, design, or glare on the Ferry Building, the Agriculture Building, and Pier 1—historic resources that are in close proximity to proposed project facilities—are examined in detail in Section 3.8, Cultural and Paleontological Resources, and referenced below, as appropriate.

Direct Impacts

Impact 3.10-1: Potential to Substantially Alter or Block Views of Scenic Vistas or Resources

No Action Alternative

No new structures would be built that would alter or block views of scenic vistas (e.g., views to San Francisco Bay and the San Francisco skyline) or resources (e.g., the Ferry Building, Agriculture Building, and Pier 1). Therefore, there would be no impact to these resources as a result of the No Action Alternative.

Action Alternative

For the Action Alternative, deck and pile structures would be demolished (e.g., Pier 2), and vertical elements (e.g., new gates and weather protection canopies) and horizontal elements (e.g., deck and pile structures for passenger boarding and circulation areas) would be constructed that could affect publicly accessible views of scenic vistas and visual resources in the study area.

Three new gates would be constructed. The berthing structures at each gate would consist of concrete or steel floats approximately 45 feet wide by 115 feet long, steel truss gangways approximately 12 to 14 feet

wide, entrance portals, and float canopies, similar to the existing Gates B and E. Weather protection canopies would also be constructed in both the North and South Basins along passenger queuing areas. These linear canopies would be approximately 20 feet wide and 18 to 20 feet high, and constructed of steel and glass; these canopies could include photovoltaic cells.

Additional horizontal elements would be constructed or repaired to improve passenger circulation and access to the new gates, including the Gate A Access Pier, North Basin Marginal Wharf, Embarcadero Plaza, East Bayside Promenade, and the South Apron of the Agriculture Building. Figures 2-3, 2-5, and 2-6 contain simulated views of the proposed project elements. The Port's and BCDC's design guidelines promote aesthetic planning criteria that guide the initial development of projects in a manner consistent with preservation of views and scenic resources. The proposed project has been preliminarily designed to comply with the guidelines. In addition, during final design, and as required by the BCDC permit process and the Port project approval process, the project's final design will go through a joint Port and BCDC design review process. This process ensures the project's final design consistency with each agency's design guidelines and policies.

Gate A, in the North Basin, would require the construction of a 30-foot-wide, 265-foot-long pier to provide access to the berthing facilities. The Gate A Access Pier would be constructed where Pier ½[2] was located, and Gate A would be located to the east of where Pier ½ previously ended (see Figure 2-1). Figure 3.10-1, View 6, shows the area where Gate A and the Gate A Access Pier would be constructed, with Pier 1 in the background. Figure 3.10-1, View 3, is a ground-level view from public areas along The Embarcadero to the North Basin, with views of the Bay Bridge and Treasure Island in the background; it also shows the area where Gate A and the Gate A Access Pier would be constructed. Views of this area after implementation of the proposed project would contain an access pier, entry portal, gangway, and float for Gate A, as well as the weather protection canopies for Gate A and Gate B. The Gate A float would be similar in height and material to the existing float at Gate B (see Figures 2-3 and 2-5), and would therefore be of similar scale, color, and texture. Depending on the specific viewer vantage point, the features in the North Basin could potentially block views of the background (i.e., areas beyond the North Basin), including San Francisco Bay and portions of Treasure Island and the Bay Bridge. However, this impact is anticipated to be minor due to the limited width, height, and massing of the new features, and the abundance of adjacent vantage points that would retain these views. The weather protection canopies in the North Basin could potentially block portions of the public's views of the Ferry Building and Pier 1 from along The Embarcadero, depending on the vantage point. However, because of their relatively low vertical profiles, light massing, and glass features, these project elements would have minimal visual impact, particularly when compared to the overall scale of the Ferry Building and Pier 1. The weather protection canopies would stand no higher than 20 feet, far below the heights of the adjacent buildings, and would be visually subordinate to the Ferry Building and Pier 1. Refer to Section 3.8, Cultural and Paleontological Resources, for more discussion of the proposed project's compatibility with the historic resources within the project area.

Gates F and G, in the South Basin, would be constructed between existing Gate E and Pier 14. With the exception of the portion of the basin that currently contains Pier 2, the area where the two new gates would be placed is open water and can be seen on Figure 3.10-1, Views 1 and 9. Demolition of the deck and piles for Pier 2 would create space for the development of Gates F and G. Figure 2-6 shows a simulation of the spacing and layout of the gates and weather protection canopies in the South Basin. The new gates would be spaced to allow for interspersed views of San Francisco Bay to the east and south from public areas in and near the project site, and would be similar in scale to the existing Gate E. Figure 3.10-1, View 4, shows the existing Gate E in relation to the Ferry Building and Agriculture Building, as viewed by publicly accessible areas along the west side of The Embarcadero. Similarly, the

[2] As described in Chapter 2, as part of the America's Cup project, Pier ½ has been removed. Additionally, the building that currently houses Sinbad's Restaurant on Pier 2 is to be vacated and removed by March 2015. Demolition of these facilities as a part of the America's Cup project is not addressed in this Environmental Impact Statement/Environmental Impact Report.

new vertical elements would also be to the east of and in between the Ferry Building and Agriculture Building, and therefore would not block or interfere with views of either of these scenic resources.

The project improvements in the South Basin also include a variety of horizontal elements (e.g., replacement of deck and pile structure, construction of additional deck and pile structures). These improvements would be between Gates E, F, and G, and would not have vertical elements that could block or interfere with views of scenic vistas or resources. In fact, these improvements would provide additional public vantage points from which to view the vistas and scenic resources in the project area, and would therefore result in a beneficial impact.

The project would add project elements (i.e., gates, weather protection canopies, piers, and deck and pile structures) to the North and South Basins that would be consistent with scale and color of existing features, and would not substantially alter or block views of the Ferry Building, Agriculture Building, Pier 1, or the San Francisco skyline from San Francisco Bay. The new project elements would interrupt views of San Francisco Bay from the project area from specific vantage points. However, because an abundance of views of San Francisco Bay would still exist and because the project would improve the public's access to these views, the project would not substantially alter or block views of scenic vistas or scenic resources.

National Environmental Policy Act (NEPA) Determination. The project's impact to aesthetics and visual resources as a result of altering or blocking views of scenic vistas or resources would not be adverse.

California Environmental Quality Act (CEQA) Determination. The project's impact to aesthetics and visual resources as a result of altering or blocking views of scenic vistas or resources would be less than significant.

Impact 3.10-2: Potential to Degrade or Contrast with the Visual or Aesthetic Aspects of the Existing Landscape

No Action Alternative

No new structures would be built that would degrade or contrast with the scale, visual quality, or visual context of the existing landscape. Therefore, there would be no impact under the No Action Alternative.

Action Alternative

For the Action Alternative, some deck and pile structures would be demolished, and new vertical (e.g., gates and weather protection canopies) and horizontal elements (e.g., deck and pile structures) would be constructed.

As mentioned above, the Port's and BCDC's design guidelines promote aesthetic planning criteria that guide the initial development of projects in a manner consistent with preservation of views and scenic resources. The preliminary design of the terminal facility has been developed to ensure compatibility with the surrounding visual environment; has taken into account the existing area and functional features; and would be consistent with the scale, visual quality, and visual context of the existing landscape. In addition, as discussed in Section 2.6, the final design would also be reviewed through the Port's and BCDC's design review processes to ensure that the final design is consistent with the plans and policies of each agency.

The North Basin is primarily open water between the Ferry Building and Pier 1, including Gate B. Pier ½ was recently demolished in this area. Figure 2-5 is a simulation of North Basin once the new Gate A and associated elements are constructed. As shown, the improvements in the North Basin would also create a

cohesive aesthetic. Gate A and Gate B would be similar in design (i.e., height, color, massing, and alignment). The North Basin Marginal Wharf improvements would connect the Gate A Access Pier to improvements that the Port has implemented along the marginal wharf, creating a contiguous edge along the water. Gate A and its access pier would be constructed with features (lighting, railings, and surface treatments) consistent with the rest of the Ferry Building area.

The South Basin currently contains a mix of visual elements, both modern and historic, that results in some visual clutter, as shown on Figure 3.10-1, Views 4, 8, and 9, including a variety of railing styles and pavement treatments, vehicular parking, historic buildings of varying architectural styles and colors, and a modern building. Figure 2-6 is a simulation of the spacing and layout of the new project elements in the North and South Basins. The simulations show a cohesive visual setting. Circulation improvements would be made that include creation of an Embarcadero Plaza, by covering the small open-water area between the Agriculture Building and the Ferry Building; extension of the East Bayside Promenade; improvement of the South Apron of the Agriculture Building; and weather protection canopies. These elements would result in more functional passenger circulation and a more cohesive aesthetic in the South Basin area (including cohesive railings, lighting, and pavement throughout the South Basin). The three water transit gates in the South Basin would be evenly spaced, similar in size and design, and light in massing and color. They would not detract from or obstruct from the nearby historic buildings or character (as described in Impact 3.10-1), and would provide more continuity in the visual character of the project area.

The new features would not contrast with the scale, visual quality, or visual context of the area. The new project elements would be consistent with the look of a Ferry Terminal, and would be a continuation of the design elements that were constructed in the Port's first phase of the Ferry Terminal Project in 2003. The new gates (Gates A, F, and G) would match the design of the existing gates (Gates B and E), but with slightly wider door openings. Features such as seatwalls, steps, planters, bicycle racks, and other furnishings could be incorporated into the final design to further add to the cohesive aesthetic and continuity in design of the Ferry Terminal area. Lighting would be consistent in size and light levels with what is currently in the area, and is discussed in greater detail below. As such, the project would add new features, but these features are not anticipated to degrade the scale, visual quality, or visual context of the area.

In addition, as described in the Site Maintenance subsection of Section 2.3.6, Operating Elements, the Water Emergency Transportation Authority and the Port would develop a Site Maintenance Plan prior to project initiation. The plan would designate responsibility and a schedule for regular maintenance and cleaning of the new facilities (e.g., canopies), as well as general site maintenance activities (e.g., wash-down; litter removal and trash receptacle management; and lighting and landscape management).

NEPA Determination. The project's potential to impact aesthetics and visual resources by degrading or contrasting with the scale, visual quality, or visual context of the area would not be adverse.

CEQA Determination. The project's potential to impact aesthetics and visual resources by degrading or contrasting with the scale, visual quality, or visual context of the area would be less than significant.

Impact 3.10-3: Potential for Light and Glare to Adversely Affect Views, People, or Properties

No Action Alternative

No new lighting or additional glare would be added to the project area. Therefore, there would be no impact under the No Action Alternative.

Action Alternative

For the Action Alternative, each berthing facility would be designed with internal lighting fixtures that project light onto to the roof of the canopies, with sufficient light for pedestrian safety and security. Lighting would also be installed along the public circulation and access areas. The lighting would be similar in fixtures size and light levels to what is currently in the Ferry Building area.

Outdoor lighting would be focused, directed, and shielded to avoid the production of glare, and minimize up-light and light spill. As feasible, fixtures would be located, aimed, or shielded to minimize stray light to or across property boundaries. Light design would incorporate down-cast, low glare, shields, or equivalent designs to minimize light and glare. Levels and types of light and glare would be consistent with the area, would not have an adverse impact on daytime or nighttime views in the area, and would not result in adverse effects to people or properties.

NEPA Determination. The proposed project's potential to impact daytime or nighttime views in the area, or to substantially affect other people or properties as a result of light and glare, would not be adverse.

CEQA Determination. The proposed project's potential to impact daytime or nighttime views in the area, or to substantially affect other people or properties as a result of light and glare, would be less than significant.

Indirect Impacts

Neither the No Action Alternative nor the Action Alternative would have indirect impacts to visual resources or aesthetics.

Construction Impacts

The No Action Alternative would not result in any physical changes to the Ferry Terminal, and no construction activities would be required. Therefore, there would be no construction impacts to aesthetics or visual resources.

Impact 3.10-4. Potential to Substantially Alter or Block Views or Degrade or Contrast with Existing Landscape During Construction

The proposed project would include demolition and construction of facilities in the project area. The areas that would be affected by project construction, including construction staging areas, are shown on Figure 2-9. Public views in the study area of the construction zone would contain the barges, large and small construction equipment, and equipment and material storage.

The majority of demolition and construction would be staged and conducted from equipment and material barges. The equipment barges would be outfitted with large cranes and other equipment (e.g., clamshell dredge, excavator) operating from the barge. Depending on viewer vantage point, the cranes could be visible from public areas, and could potentially block views to and across San Francisco Bay. The construction equipment would have a different scale and quality than the permanent features in the project area. The barges would contrast with the existing gates and water transit vessels that are typically present in the middle ground. However, larger dredging vessels are occasionally visible in the middle ground for periodic maintenance dredging along the waterfront, and container and large cruise ships also travel on San Francisco Bay and can be seen in the background. These barges and construction equipment would be a temporary feature in the waterfront area, and would be consistent with the maritime character of the area. The scale, visual quality, and visual context would be consistent with current vessel activity; although specific types of vessels may vary, the average scale and color would be similar enough that the visual context would not change.

The project improvements (e.g., Gate A access pier and the Embarcadero Plaza), once constructed, would also be used for staging of equipment, materials, and supplies during construction of utility extensions, gate and canopy structures, and topping slab; and placement of ticket machines, railings, lighting, signage, and bioretention planters. These areas would be highly visible from The Embarcadero.

The curbside areas between the Ferry Building and Pier 1, and between the Ferry Building and the Agriculture Building, would be used for materials delivered by truck. Goods would be transported immediately to the staging area after delivery. The Ferry Building currently processes truck deliveries to the area for building tenants and the regularly scheduled farmers market. Deliveries to the area are a regular occurrence. The additional delivery of construction materials would not be a substantially adverse impact, because these materials would be transported to their designated staging areas, and would not degrade public views from and containing The Embarcadero.

The presence of equipment, barges, and construction staging and material storage on site during construction would contrast with and could temporarily degrade the visual quality or context of the existing landscape. As described in Section 2.4, best management practices would be implemented during construction to ensure that the construction site would be maintained in a clean and orderly state. Regulatory requirements discussed in Section 3.11, Hydrology and Water Quality, would establish additional best management practices designed to protect water quality for all demolition and construction activities, including work over water, such as removing solid waste regularly, and using containment booms to capture any pile fragments and floating demolition debris. Views of construction equipment and materials storage would be noticeable, but consistent with the urban and maritime nature of the waterfront, and therefore are not anticipated to be adverse.

NEPA Determination. The project's impact on scenic vistas or resources, the scale, visual quality, or visual context of the area as a result of construction would not be adverse.

CEQA Determination. The proposed project's impact on scenic vistas or resources, the scale, visual quality, or visual context of the area as a result of construction would be less than significant.

Cumulative Impacts

Impact 3.10-5. Potential to Result in Cumulative Impacts on Aesthetics or Visual Resources

The geographic area of potential aesthetic and visual resource cumulative impacts is within the viewshed of the study area. As described in this section, the proposed project facilities would introduce new visual elements to the project area that would affect the visual character of the study area and alter some views of scenic views, vistas, or resources. The Port and BCDC's permitting and approval process would ensure the project's consistency with the Port and BCDC policies intended to protect aesthetics and public views along the waterfront. Although the impacts from the proposed project would not be substantial and have been determined to be less than significant and not adverse, other reasonably foreseeable projects in the study area could result in similar impacts. The America's Cup project, Golden Gate Transit Ferry Terminal Improvements, Bay Area Rapid Transit (BART) Ferry Plaza Physical Barrier Project, and Agriculture Building Rehabilitation and Seismic Upgrades would all be constructed in the study area and could affect views, introduce new visual elements, or change the visual character of the project area.

The America's Cup project (for the portions in the Rincon Point Open Water Basin, 14 – 22½), Golden Gate Transit Ferry Terminal Improvements, BART Ferry Plaza Physical Barrier Project, and Agriculture Building Rehabilitation and Seismic Upgrades could involve similar construction activities that could affect aesthetics or visual resources in the study area. However, none of the projects are anticipated to be constructed concurrently; therefore, all potential impacts would be related to the operational phases of these projects.

America's Cup project components in the vicinity of the Ferry Terminal would result in the temporary addition of boats and berthing facilities (i.e., floating dock for large spectator yachts) for the event in 2013. The proposed water-based uses—such as docking and mooring boats—would temporarily add additional vessels to the San Francisco waterfront that would be removed in 2014, prior to the initiation of the proposed project. The negotiations between CCSF and the America's Cup Event Authority have also included long-term development rights for the Rincon Point Open Water Basin, just south of the project area. However, negotiations are not yet completed, and the future use of the open-water basin is too speculative to evaluate as a reasonably foreseeable project at this time. The America's Cup project has and would result in changes within the project area (the completed removal of Pier ½, and the future removal of the building on Pier 2), as described in Section 2.2. Removal of these structures would create space that would be used for the development of the proposed project elements.

Three other projects with the potential to contribute to cumulative visual and aesthetics impacts are planned in the project study area. Improvements to upgrade accessibility would occur at Golden Gate Transit Ferry Terminal's Gates C and D. Although environmental review has not yet been initiated, this project is not anticipated to result in significant visual changes in the area, and is anticipated to be minor in duration (i.e., from weeks to a few months), due to the scale and nature of the project. Construction of the proposed project would not preclude the Golden Gate Transit Ferry Terminal improvement project, because the proposed project improvements would not be on the Ferry Plaza or at Gates C and D. If Golden Gate Transit's project was to advance, and construction is projected to occur concurrently with the proposed project, because the scale of construction activities for the Golden Gate Transit project would be small, the projects would not be expected to cumulatively adversely impact aesthetics or visual resources in the project area.

Similar to the Golden Gate Transit Ferry Terminal Improvements project, the Agriculture Building project has not initiated environmental review or design. The proposed project has been developed in a manner that would not preclude redevelopment of the Agriculture Building. In addition, redevelopment of the Agriculture Building would not be expected to result in significant visual changes in the area, because the Agriculture Building is a historic resource, and its redevelopment would need to evaluate any proposed alterations. Environmental review for the project would evaluate the potential cumulative impacts as the project is advanced.

The Port and BCDC's design guidelines would also apply to both of these projects. These projects would remain consistent with area use; and when combined with the proposed project, would not result in new or additional adverse effects on area aesthetics or visual resources.

The BART Ferry Plaza Physical Barrier Project would install physical barriers on the Ferry Plaza in the project area. This project is currently under construction, and would not be expected to result in an overlap in construction schedules with the proposed project. This BART project has undergone separate environmental review and design review by BCDC and the Port; it was determined that the project would not result in significant visual changes in the area. The improvements are generally low-profile and would not be expected to change views of or views within the project area. In addition, the proposed project improvements would not be on the Ferry Plaza. Therefore, the projects would not be expected to cumulatively adversely impact aesthetics or visual resources in the project area.

Therefore, cumulative impacts are not anticipated to be substantially adverse, and the proposed project would not have a cumulatively considerable contribution to cumulative impacts related to aesthetics or visual resources.

NEPA Determination. The project would not contribute to cumulative adverse impacts to aesthetics or visual resources.

CEQA Determination. The project would not contribute to cumulative impacts to aesthetics or visual resources, and would be less than significant.

3.10.4 Mitigation Measures

Mitigation measures are not required for aesthetics or visual resources.

3.11 HYDROLOGY AND WATER QUALITY

3.11.1 Introduction to the Analysis

This section describes the existing hydrologic setting of San Francisco Bay and the San Francisco waterfront area in the project area. Existing water quality and sediment quality are described, and potential areas of flooding, tsunami inundation, and sea-level rise are identified. This section also includes a discussion of the federal, state, and local regulatory framework applicable to construction and implementation of the proposed project.

Potential impacts related to flooding, sea-level rise, tsunami inundation, and wave activity are addressed. Construction impacts are evaluated with respect to water quality impacts during dredging, demolition, pile removal, and installation of piles and decking. Finally, cumulative impacts are assessed based on a list of reasonably foreseeable projects that could contribute to cumulative effects. As described below, the proposed project would not have adverse effects on hydrology and water quality.

Existing conditions and potential impacts associated with land uses, including San Francisco Bay Conservation and Development Commission (BCDC) plans and policies, are addressed in Section 3.3, Land Use and Land Use Planning. Existing conditions and potential impacts associated with water quality impacts on fisheries and other aquatic species are addressed in Section 3.9, Biological Resources.

3.11.2 Affected Environment

This section describes surface and groundwater hydrology and water quality in the project area, as well as the applicable and relevant regulations related to hydrology and water quality.

Existing Setting

This section describes hydrology and water quality resources that could be affected by the proposed project. The discussion of existing setting is based on information presented in the 2003 *Program Environmental Impact Report for the Expansion of Ferry Transit Service in San Francisco Bay Area* (WETA, 2003a), and supplemented or updated, as appropriate, with project-specific and current information. The primary sources of information include reports prepared by the San Francisco Bay Regional Water Quality Control Board (RWQCB), the Port of San Francisco (Port), BCDC, San Francisco Estuary Institute (SFEI), and the City and County of San Francisco (CCSF).

Study Area

The study area for hydrology and water quality is defined as the project area. The project area lies within the San Francisco Bay hydrologic region, which covers an area of approximately 4,603 square miles, extending from southern Santa Clara County north to Tomales Bay in Marin County, and inland to the confluence of the Sacramento and San Joaquin Rivers (RWQCB, 2010). Rivers and streams in the region flow to San Francisco Bay or directly to the Pacific Ocean. The dominant feature is the San Francisco Bay estuary, where fresh water from the Central Valley mixes with saline water from the Pacific Ocean.

San Francisco Bay is composed of three distinct hydrographic regimes: the South Bay, which extends from the Bay Bridge to the southern terminus of San Francisco Bay in San Jose; and the Central and North bays, which connect the Delta and the Pacific Ocean. The project area is located in the Central Bay, which is strongly influenced by tidal currents due to its proximity to the Pacific Ocean. East of the Golden Gate, the water depth is approximately 300 feet, and extensive intertidal mudflats are present at the eastern edge of the Central Bay (WETA, 2003a). The estimated water depth at the project site is generally about 10 feet.

The project area is east of The Embarcadero in the waterfront area, between Pier 1 to the north and Pier 14 to the south. It includes Gate B (north of the San Francisco Ferry Building [Ferry Building]), the Agriculture Building, the Ferry Plaza, Pier 2, and Gate E. The project area is over and on San Francisco Bay, east of the seawall. There are no natural seeps, springs, or streams present within the project boundary. Precipitation that falls onto the project area runs off the piers and directly into San Francisco Bay.

Potentially hazardous materials are known to be present within the project area (see Section 3.12, Hazards and Hazardous Materials); this includes existing pilings and structures treated with creosote.

CCSF manages a combined sewer system that serves approximately 10 percent of San Francisco (SFPUC, 2010). Portions of this system are beneath The Embarcadero, adjacent to the project area. For additional information on the CCSF's combined sewer system, see the Public Services and Utilities section. As described above, stormwater runoff from the project area discharges directly into San Francisco Bay, and not into the combined sewer system.

Water Quality

The San Francisco Bay RWQCB has established beneficial uses for surface water bodies, as well as groundwater, in the project area. These beneficial uses are described in the *San Francisco Bay Basin (Region 2) Water Quality Control Plan* (Basin Plan). The Basin Plan specifies existing beneficial uses for San Francisco Bay, Central Bay, which include: industrial service and process supplies, commercial fishing, shellfish harvesting, estuarine habitat, fish migration, fish spawning, navigation, rare and endangered species preservation, wildlife habitat, and water contact recreation. A detailed discussion of beneficial uses and water quality objectives can be found in the Basin Plan (RWQCB, 2010).

Since 1993, the SFEI has administered a Regional Monitoring Program (RMP) for the San Francisco Bay RWQCB and major San Francisco Bay dischargers. Most dischargers to San Francisco Bay are required to participate as a condition of their discharge permit. SFEI conducts monitoring to assess spatial patterns and long-term trends in contamination. The RMP measures concentrations of various constituents in water, sediment, bivalves, bird eggs, and fish at various locations in the estuary, including the Central Bay.

To assess water quality, trace metals (including copper, mercury, nickel, selenium, silver, and zinc) and trace organics are measured in water samples collected during the dry season. Water samples are analyzed for polybrominated diphenyl ethers annually, and all other organic parameters (e.g., pesticides, polycyclic aromatic hydrocarbons [PAHs], and polychlorinated biphenyls [PCBs]) on a biennial basis. Ambient water toxicity was last measured in 2007, but because very little aquatic toxicity has been observed in San Francisco Bay in recent years, testing now takes place every 5 years (SFEI, 2011). Aquatic toxicity has declined, possibly associated with reduced use of organophosphate pesticides (SFEI, 2006). According to the 2006 Pulse of the Estuary (SFEI, 2006), results of the RMP show significant improvements in basic water quality conditions, such as the oxygen content of water, due to investments in wastewater treatment. Contamination due to toxic chemicals has also generally declined since the 1950s and 1960s.

Other trends noted by SFEI include:

- Mercury concentrations in striped bass, a key mercury indicator species for the estuary, have shown little change in 30 years.

- PCB concentrations appear to be gradually declining based on trends observed in mussels, fish, and birds.

- Concentrations of dichloro-diphenyl-trichloroethane (DDT), chlordane, and other legacy pesticides have declined more rapidly. On the other hand, concentrations of chemicals in current use, such as pyrethroid insecticides and polybrominated diphenyl ethers, are on the increase.

The water in San Francisco Bay is considered to be generally well oxygenated, with typical concentrations of dissolved oxygen in most of San Francisco Bay ranging from 9 to 10 milligrams per liter (mg/L) during high periods of river flow, 7 to 9 mg/L during moderate river flow, and 6 to 9 mg/L during the late summer months, when flows are lowest (SFEI, 2008).

Sediment Quality

The SFEI's RMP also includes sampling and testing of sediments from San Francisco Bay since 1993 (SFEI, 2009). Sediment samples are collected during the wet season and the dry season in alternating years, and analyzed for conventional sediment quality, trace metals, and trace organics. Samples are collected from the near surface (top 12 inches). The long-term sampling location closest to the project site in the Central Bay is east of Yerba Buena Island.

RMP monitoring results indicate that sediment toxicity in San Francisco Bay has consistently been observed in a large proportion of samples tested, but varies over time (SFEI, 2006). These variations probably reflect changes in sediment contamination, toxicity, and benthic communities related to seasonal and annual changes in run-off, salinity, and contaminant loadings. Sediments sampled from the Yerba Buena Island location suggest that sediment toxicity is associated primarily with DDT, zinc, and lead (Thompson and Lowe, 2008).

Bay Protection and Toxic Cleanup Program

The Bay Protection and Toxic Cleanup section of the California Water Code (Division 7, Sections 13390-13396.5) established a program to identify and plan remediation of toxic hot spots in bays and estuaries. The Consolidated Toxic Hot Spots Cleanup Plan (SWRCB, 2003) identified sediments in the entire San Francisco Bay as a high-priority toxic hot spot for mercury, selenium, PAHs, and dieldrin.

Flooding

The Federal Emergency Management Agency (FEMA) identifies special flood hazard areas (SFHAs) on flood insurance rate maps (FIRMs) for all communities that participate in the National Flood Insurance Program. CCSF only recently joined this program, and the FIRMs for CCSF have not yet been finalized. FIRMs are used by state and local governments for administering floodplain management programs, enforcing building codes, and mitigating flooding losses in their communities. The floodplain information on the FIRM is based on historical data and hydrologic and hydraulic computations. The 100-year floodplain, or the areas inundated by a storm having a 1 percent annual chance of occurrence, is the regulatory standard used by federal, state, and local agencies.

Because FEMA has not previously published a FIRM for CCSF, there are no officially identified SFHAs within San Francisco's geographic boundaries. FEMA completed the initial phases of a study of San Francisco Bay. On September 21, 2007, FEMA issued a preliminary FIRM of San Francisco for review and comment by CCSF. FEMA is currently conducting more detailed studies of coastal flooding hazards in San Francisco Bay, and is expected to publish a revised preliminary FIRM for flood insurance and flood management purposes when those studies are complete (CCSF, 2011a).

In August 2008, and as amended in 2010, CCSF enacted the Floodplain Management Ordinance (CCSF, 2008a and 2010a). This ordinance regulates construction and substantial improvements to structures in flood-prone areas. Interim floodplain management maps were developed by the CCSF in 2008, and are in effect until FEMA publishes its final FIRM. The project site is not in any designated flood zone on

CCSF's interim floodplain maps (CCSF, 2008a). However, there is a small area south of the Agriculture Building that is designated as an SFHA.

The Port Building Code (Port, 2011a) establishes design parameters associated with the 100-year flood event for various offshore points along the Port waterfront. The Building Code includes estimated elevations and wave heights for the 100-year flood event for properties under the jurisdiction of the Port. Table 3.11-1 summarizes the relevant information for the project area.

Table 3.11-1
100-Year Base Flood Elevation and Wave Height

Location	Base Flood Elevation (feet, MLLW)	100-Year Significant Wave Height (feet)
Ferry Plaza	10.89	4.5
Agriculture Building	11.20	4.5

Source: Port, 2011a

Note:

MLLW = mean lower low water = -11.34 feet (San Francisco Datum)

Tsunami

A tsunami is a water wave or a series of waves generated by an impulsive displacement of the surface of the ocean or other body of water. A tsunami can travel across oceanic basins and cause damage several thousand miles from its source. Most tsunamis are caused by a rapid vertical movement along a break in the Earth's crust; that is, a tectonic fault rupture on the bottom of the ocean resulting in displacement of the column of water directly above it. The majority of tsunamis are triggered by earthquake rupture along subduction zones. The 1964 Alaska earthquake generated a tsunami that caused widespread damage along the coastline of northern California. Investigations have also shown that tsunamis resulting from earthquakes on the subduction zone beneath Japan and the Cascadia subduction zone in the Pacific Northwest have inundated the Pacific Coast states (Atwater et al., 1999). For example, the tsunami following the major Japanese earthquake (March 11, 2011) resulted in an estimated wave height rise of 2 feet in San Francisco Bay (California Coastal Commission, 2011).

In 2009, the California Emergency Management Agency, the University of Southern California, and the California Geological Survey prepared tsunami evacuation planning maps for San Francisco Bay (CalEMA et al., 2009). The inundation line shown on the map represents the maximum considered tsunami runup from a number of extreme, yet realistic, tsunami sources. The purpose of the map is to assist cities and counties in identifying their tsunami hazard, and is intended for local jurisdictional, coastal evacuation planning uses only; it is not intended to be used for evaluating infrastructure or land use with respect to tsunami hazards. The project area is in the predicted tsunami inundation area.

Sea-Level Rise

Sea levels along California's coast have risen about 7 inches over the past century (CEC, 2008 and 2009). The average sea level rose at a rate of approximately 0.07 inch per year from 1961 to 2003, with an accelerated average rate of about 0.12 inch per year during the last decade (CEC, 2009).

Studies that account for climate change as a result of global warming predict that sea-level rise will accelerate and proceed at significantly higher rates than previously thought. The Intergovernmental Panel on Climate Change (IPCC) has published projections on global sea-level rise in 2001, and refined estimates in 2007. The projections considered thermosteric sea-level change (expansion of sea water as it warms) and eustatic sea-level changes due to increased fresh water inflows from melting sea and glacial

ice, under a range of emission scenarios. These earlier studies had estimated that sea level would rise by as much as 20 inches by 2100, which corresponds to an average rate of approximately 0.2 inch per year, or about twice the historical average rate.

Recent studies focus on two of the emission scenarios from the earlier studies, and include adjustments that consider the effects of dams on sea-level rise. These current studies predict that sea-level rise may accelerate faster than the earlier IPCC studies had indicated (BCDC, 2009; CEC, 2009). In addition, an Independent Science Board contracted by the State of California has recommended that the state adopt conservative estimates for sea-level rise to account for accelerating contributions from ice sheet melting, and use the most conservative methodologies. Based on these emission scenarios, sea-level rise estimates range from 20 to 55 inches by 2100. It should be noted that the estimated increase of 55 inches is more than 2.5 times the IPCC's 2007 estimate.

Groundwater

The project site is in and adjacent to the Downtown San Francisco groundwater basin (DWR, 2004; RWQCB, 2010). The California Department of Water Resources has identified the boundary of the basin to be coincident with the land surface edge (including the edge of the piers that extend into San Francisco Bay). The extent of the basin beneath San Francisco Bay is not known, but studies have recognized the continuation of aquifers from land to beneath saline coastal waters, with groundwater gradients being generally toward the coast or the San Francisco Bay shoreline (Harrold et al., 2008). The San Francisco Bay RWQCB acknowledges that groundwater may also occur outside of currently identified basins; for this reason, groundwater includes all subsurface waters, regardless of whether these waters meet the classic definition of an aquifer, or occur within identified groundwater basins. For the Downtown San Francisco groundwater basin, the Basin Plan identifies municipal and agricultural supply as existing beneficial uses, and industrial process and service supply as potential beneficial uses (RWQCB, 2010). Although groundwater may have been used historically for potable water supply, most of CCSF is supplied with water provided by CCSF from the Hetch Hetchy Reservoir in Yosemite National Park.

The water-bearing formations in the Downtown San Francisco groundwater basin are thickest beneath the central and northeastern portions of the basin (between Interstate 80 and Chinatown). Within most of the basin, bedrock is encountered at less than 200 feet below ground surface (DWR, 2004).

Published groundwater quality information is not available for the Downtown basin, but limited water quality data for the surrounding basins suggest that the general character of groundwater for all basins beneath the entire San Francisco peninsula is similar. Concentrations of most major dissolved constituents are within the guidelines recommended by the U.S. Environmental Protection Agency (U.S. EPA). Total dissolved solids vary from about 200 to over 700 parts per million. Elevated concentrations of nitrate and chloride are common, especially at shallower depths (DWR, 2004).

Regulatory Setting

Federal

Clean Water Act

The federal Clean Water Act (CWA) (33 United States Code [USC] § 1257 et seq.) requires states to set standards to protect water quality. The objective of the federal CWA is to restore and maintain the chemical, physical, and biological integrity of the nation's waters. Specific sections of the CWA control discharge of pollutants and wastes into marine and aquatic environments.

Section 311 – Oil Pollution Act

CWA Section 311, as amended by the Oil Pollution Act of 1990, provides for spill prevention requirements, spill reporting obligations, and spill response planning and authorities. It regulates the prevention and response to accidental releases of oil and hazardous substances into navigable waters, on adjoining shorelines, or affecting natural resources belonging to or managed by the United States. The U.S. Coast Guard is responsible for regulations and enforcement related to vessels and marine transportation, and the U.S. EPA is responsible for nontransportation–related facilities and onshore operations.

Section 401 – Clean Water Quality Certification

Under Section 401 of the CWA, water quality certification is required from the state for any activity that requires a federal permit or license that may result in discharge into navigable waters. The certification must indicate that the activity will comply with the applicable state water quality standards. Under Section 401, states are also required to establish water quality standards for all state waters. To receive certification under Section 401, an application must demonstrate that activities or discharges into waters will not cause concentrations of chemicals to exceed state standards. With respect to the project, the authority to grant water quality certification has been delegated to the State Water Resources Control Board (SWRCB), and for the project area, applications for certification under CWA Section 401 are processed by the San Francisco Bay RWQCB. A Section 401 Certification will be necessary to obtain a 404 permit for discharge into waters subject to U.S. Army Corps of Engineers (Corps) jurisdiction (discussed below).

Section 402 – National Pollutant Discharge Elimination System Program

Point source discharges to surface water are regulated by Section 402 of the CWA through requirements set forth in specific or general National Pollutant Discharge Elimination System (NPDES) permits. Stormwater discharges associated with construction activities and certain categories of industrial activities, as well as incidental nonstormwater discharges associated with construction, fall under this act and are addressed through general NPDES permits. In California, requirements of the CWA regarding regulation of point source discharges and stormwater discharges are delegated to the SWRCB, and administered by the nine RWQCBs. The San Francisco Bay RWQCB implements the statewide policy in the project area. Under California's NPDES program, any waste discharger subject to the NPDES program must obtain coverage under the appropriate general NPDES permit from the local RWQCB.

Section 404 – Discharge of Dredged or Fill Material

Section 404 of the CWA regulates the discharge of dredged or fill material (e.g., fill, pier supports, and piles) into waters of the United States, which includes San Francisco Bay. The program is jointly administered by the Corps and the U.S. EPA.

Rivers and Harbors Act

Section 10 of the Rivers and Harbors Act of 1899 (33 USC Section 401 et seq.) requires a permit for creating obstructions (including excavation and fill activities) to the navigable waters of the United States. Navigable waters are defined as those water bodies subject to the ebb and flow of the tide, and/or that are used, in their natural condition or by reasonable improvements, as means to transport interstate or foreign commerce. Construction of structures in, under, or over navigable water; deposition or excavation of material in navigable waters; and all work affecting the location, condition, course, or capacity of navigable water are covered by Section 10 of the Rivers and Harbors Act. San Francisco Bay is a navigable water. The Corps administers the Rivers and Harbors Act. For projects that fall under both the Rivers and Harbors Act and Section 404 of the CWA, the Corps will process and issue a single permit.

Refuse Act of 1899

The Rivers and Harbors Act of 1899 also prohibits the discharge of any refuse matter from a ship, barge, floating craft, shore, or wharf into any navigable water of the United States (33 USC Section 407). The U.S. Coast Guard is the responsible enforcement agency.

International Convention for the Prevention of Pollution from Ships

Title 33 of the Code of Federal Regulations addresses navigation and navigable waters, including the prevention of pollution from ships, in accordance with the Act to Prevent Pollution from Ships, 1980 (33 USC 1901–1911); and the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 (referred to as MARPOL 73/78). The regulations cover the prevention of pollution by oil, noxious liquids, harmful substances, and garbage from operational measures, as well as from accidental discharges. The U.S. Coast Guard is the responsible enforcement agency.

Coastal Zone Management Act

The Coastal Zone Management Act, established in 1972 and administered by the National Oceanic and Atmospheric Administration's Office of Ocean and Coastal Resource Management, provides for management of the nation's coastal resources. The overall purpose is to balance competing land and water issues in the coastal zone. For San Francisco Bay and the project area, the BCDC is the local coastal zone management agency, and is responsible for issuing consistency determinations under the Coastal Zone Management Act.

Floodplain Management

Executive Order 11988 requires that federal agency construction, permitting, or funding of a project must avoid incompatible floodplain development, be consistent with the standards and criteria of the National Flood Insurance Program, and restore and preserve natural and beneficial floodplain values.

National Flood Insurance Act

The National Flood Insurance Act (42 USC Section 4001 et seq.) addresses both the need for flood insurance and the need to lessen the devastating consequences of flooding.

Floodplain Management and Protection and Flood Disaster Protection Act

The Floodplain Management and Protection (U.S. Department of Transportation Order 5650.2) and Floor Disaster Protection Act (42 USC Sections 4001 to 4128) require the identification of flood-prone areas, provide insurance, and require purchase of insurance for buildings in SFHAs.

State

Porter–Cologne Water Quality Control Act of 1969

The Porter-Cologne Water Quality Control Act of 1969 (Porter-Cologne Act) established the SWRCB and nine RWQCBs as the primary state agencies with regulatory authority over water quality and surface water rights allocation. Wastes that cannot be discharged directly or indirectly to waters of the state (and therefore must be discharged to land for treatment, storage, or disposal) are classified to determine specifically where such wastes may be discharged. This classification requirement would apply to dredged material or fill that would be disposed in an upland environment.

Applicable water quality protection regulations include SWRCB Resolution No. 68-16, "Statement of Policy with Respect to Maintaining High Quality of Water in California," which generally restricts dischargers from reducing the water quality of surface water and groundwater. The project area is within the jurisdiction of the San Francisco Bay RWQCB. The Basin Plan (RWQCB, 2010) designates beneficial uses for specific surface water and groundwater resources, establishes water quality objectives to protect those uses, and sets forth policies to guide the implementation of programs to attain the objectives.

Pursuant to the Porter-Cologne Act, the RWQCB is authorized to issue individual permits to allow for discharge of specified quantities and qualities of waste to land or surface waters. The limitations placed on the discharge are designed to ensure compliance with water quality objectives in the Basin Plan.

Construction Activities

Construction activities that disturb one or more acres of land surface are regulated under the statewide NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Order No. 2009-0009-DWQ and as amended by Order No. 2010-0014-DWQ) (SWRCB, 2009; SWRCB, 2010).

To obtain coverage under the Construction General Permit, the legally responsible person must electronically file the Permit Registration Documents, which include a Notice of Intent, Storm Water Pollution Prevention Plan, risk assessment, site map(s), and drawings, and the appropriate permit fee to the SWRCB and RWQCB.

Municipal Regional Stormwater NPDES Permit

The SWRCB issued Order No. 2003-0005-DWQ, NPDES Permit No. CAS000004, "Waste discharge requirements for Storm Water Discharges from Small Municipal Separate Storm Sewer Systems (General Municipal Permit)" for the discharge of stormwater runoff from the municipal separate storm sewer systems of jurisdictions and entities in the Bay Area, including CCSF and the Port. The Municipal Regional Stormwater NPDES Permit prohibits nonstormwater discharges into storm drain systems and watercourses, as well as discharges that adversely affect beneficial uses of waters of the state. The permit requires the implementation of specific control measures such as best management practices (BMPs) and regulating increases in runoff from development projects.

Local

McAteer-Petris Act

The San Francisco BCDC is responsible for implementing the McAteer-Petris Act. The Act directs BCDC to exercise its authority to issue or deny permit applications for placing fill, dredging, or changing the use of any land, water, or structure within the area of its jurisdiction (San Francisco Bay waters and 100 feet above the shoreline). The BCDC also carries out determinations of consistency with the federal Coastal Zone Management Act for federally sponsored projects.

BCDC developed the San Francisco Bay Plan pursuant to the requirements of the McAteer-Petris Act (BCDC, 2008). This plan, most recently updated in 2008, provides the policies and maps that guide the development of the San Francisco Bay and shoreline within BCDC's jurisdiction. Bay Plan policies relevant to hydrology and water quality include the following:

Water Quality

Policy 1. Bay water pollution should be prevented to the greatest extent feasible. The Bay's tidal marshes, tidal flats, and water surface area and volume should be conserved and, whenever possible, restored and increased to protect and improve water quality. Fresh water inflow into the Bay should be maintained at a level adequate to protect Bay resources and beneficial uses.

Policy 2. Water quality in all parts of the Bay should be maintained at a level that will support and promote the beneficial uses of the Bay as identified in the San Francisco Bay RWQCB's Water Quality Control Plan, San Francisco Bay Basin and should be protected from all harmful or potentially harmful pollutants. The policies, recommendations, decisions, advice and authority of the SWRCB and the RWQCB, should be the basis for carrying out the Commission's water quality responsibilities.

Policy 3. New projects should be sited, designed, constructed and maintained to prevent or, if prevention is infeasible, to minimize the discharge of pollutants into the Bay by: (a) controlling pollutant sources at the project site; (b) using construction materials that contain nonpolluting materials; and (c) applying appropriate, accepted and effective BMPs, especially where water dispersion is poor and near shellfish beds and other significant biotic resources.

Policy 6. To protect the Bay and its tributaries from the water quality impacts of nonpoint source pollution, new development should be sited and designed consistent with standards in municipal stormwater permits and state and regional stormwater management guidelines, where applicable, and with the protection of Bay resources. To offset impacts from increased impervious areas and land disturbances, vegetated swales, permeable pavement materials, preservation of existing trees and vegetation, planting native vegetation and other appropriate measures should be evaluated and implemented where appropriate.

Policy 7. Whenever practicable, native vegetation buffer areas should be provided as part of a project to control pollutants from entering the Bay, and vegetation should be substituted for rock riprap, concrete, or other hard surface shoreline and bank erosion control methods where appropriate and practicable.

Water Surface Area and Volume

Policy 1. The surface area of the Bay and the total volume of water should be kept as large as possible in order to maximize active oxygen interchange, vigorous circulation, and effective tidal action. Filling and diking that reduce surface area and water volume should therefore be allowed only for purposes providing substantial public benefits and only if there is no reasonable alternative.

Policy 2. Water circulation in the Bay should be maintained, and improved as much as possible. Any proposed fills, dikes, or piers should be thoroughly evaluated to determine their effects upon water circulation and then modified as necessary to improve circulation or at least to minimize any harmful effects.

Safety of Fills

Policy 4. To prevent damage from flooding, structures on fill or near the shoreline should have adequate flood protection including consideration of future relative sea-level rise as determined by competent engineers. As a general rule, structures on fill or near the shoreline should be above the wave runup level or sufficiently set back from the edge of the shore so that the structure is not subject to dynamic wave energy. In all cases, the bottom floor level of structures should be above the highest

estimated tide elevation. Exceptions to the general height rule may be made for developments specifically designed to tolerate periodic flooding.

In October 2011, BCDC adopted an amendment to the Bay Plan based on sea-level rise information presented in the staff background report entitled, *Living with a Rising Bay: Vulnerability and Adaptation in San Francisco Bay and on its Shoreline*, dated April 7, 2009. This report identifies vulnerabilities in the Bay Area's economic and environmental systems, as well as the potential impacts of climate change on public health and safety.

The project area is in BCDC's detailed Northeastern Waterfront planning area, as defined in the San Francisco Waterfront Special Area Plan; this area extends from Pier 35 to China Basin (BCDC, 2000). A portion of the project area is within the footprint of existing piers, with the remainder located in open water areas, as defined in the Special Area Plan. Refer to Section 3.3, Land Use and Land Use Planning, for the Bay Plan and Special Area Plan policies related to fill in San Francisco Bay for pier repair/ replacement and new fill in open water areas.

Port's Stormwater Management Program

The Port has primary land use jurisdiction over all development of property in and around the Ferry Building area, including the project site. The Port administers a Stormwater Management Program (SWMP), developed in accordance with federal CWA requirements and the California Statewide General Permit for Stormwater Discharges Associated with Small Municipalities ("Phase II General Permit") (Port, 2003). The Port's SWMP targets those areas of the San Francisco waterfront that drain directly into San Francisco Bay, and not into combined sewer systems. Based on activities that occur along San Francisco waterfront, the pollutants of concern targeted by the SWMP include suspended solids (sediments), litter, heavy metals, and petroleum hydrocarbons. Additionally, the SWMP specifies construction and operational practices for existing and newly constructed facilities on Port properties to manage and treat stormwater runoff so as to comply with applicable stormwater regulations of the San Francisco Bay RWQCB, as articulated through the San Francisco Stormwater Design Guidelines.

In accordance with the Stormwater Design Guidelines, all new development and redevelopment projects greater than 5,000 square feet are required to develop and submit for approval a Stormwater Control Plan that specifies how the project will comply with San Francisco's post-construction stormwater control requirements.

Dredged Material Management Office

The Dredged Material Management Office (DMMO) is a joint program of the BCDC, San Francisco Bay RWQCB, California State Lands Commission (CSLC), the San Francisco District Corps, and the U.S. EPA. The California Department of Fish and Wildlife, the National Marine Fisheries Service, and the U.S. Fish and Wildlife Service also participate by providing advice and expertise to the process. The purpose of the DMMO is to cooperatively review sediment quality sampling plans, analyze the results of sediment quality sampling, and make suitability determinations for material proposed for disposal in San Francisco Bay. This interagency group's goal is to increase efficiency and coordination between the member agencies, and to foster a comprehensive and consolidated approach to handling dredged material management issues. Applicants using DMMO fill out one application form, which the agencies then jointly review at bi-weekly meetings before issuing their respective authorizations. Refer to Section 3.12, Hazards and Hazardous Materials, for additional information.

3.11.3 Impact Evaluation

This section includes an analysis and determination of the potential adverse and beneficial project impacts of the proposed project on hydrology and water resources.

The analysis considered whether the project would:

- Violate any water quality standards or waste discharge requirements, or substantially degrade water quality due to mobilization of contaminated sediments or release of hazardous materials (e.g., creosote) during dredging, demolition, and construction activities;

- Violate any water quality standards or waste discharge requirements, or substantially degrade water quality due to fuel spills from vessel operations, discharge of pollutants (including trash and litter), and maintenance dredging;

- Increase San Francisco Bay fill enough that the project would be inconsistent with BCDC Bay Plan policies, and would compromise public benefits;

- Expose people or structures to a significant risk of loss, injury, or death involving inundation by tsunami;

- Expose people or structures to a significant risk of loss, injury, or death involving flooding, including future flood risks (sea-level rise induced by climate change); or

- Result in significant wake-wash impacts to shorelines or to small vessels.

To evaluate potential impacts on hydrology and water resources, both quantitative and qualitative analyses were performed. The project description, and preliminary design plans and reports for the project, were compared with information on existing and anticipated future conditions, such as sea-level rise. The applicable federal, state, and local statutes regulating water resources, described in the Affected Environment section, establish water quality standards for the purpose of protecting San Francisco Bay. The analysis evaluated the proposed project's consistency with water resource plans and policies, including the project's impacts on surface water quality, filling of San Francisco Bay, flooding due to tsunami or sea-level rise, and wave activity. Actions required under existing regulations and programs, and BMPs that address potential water resource impacts, are described as appropriate.

Due to the nature of the proposed project, there would be no project impacts related to the following issues:

- Substantially deplete groundwater supplies or interfere with groundwater recharge. The project would not involve excavation to depths that would affect aquifer systems or groundwater movement, and would not involve the construction of substantial new impervious surfaces that would impede groundwater recharge. Therefore, no impacts related to groundwater would occur.

- Substantially alter the existing drainage pattern of the site or area. All runoff from the site discharges directly into San Francisco Bay, and there are no other natural drainage features in or adjacent to the site. The project would involve minor grading or changes in drainage patterns of the site. This includes minor grade adjustments to collect stormwater from portions of the project area that currently discharges directly to San Francisco Bay, and redirect it to new stormwater treatment units. The treatment of a portion of the project area's stormwater prior to discharge to San Francisco Bay would be considered beneficial. The project would not involve the construction of substantial new impervious surfaces that would increase the amount of runoff, resulting in erosion or siltation, or affecting flooding on or off the site. Therefore, impacts related to alteration of existing drainage patterns are not discussed further.

- Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map. The project would not include the construction of housing.

- Expose people or structures to a significant risk of loss, injury, or death involving mudflow, failure of a levee, or failure of a dam. The project is not near geologic or topographic conditions that would generate mudflows. There are no levees or dams in the vicinity the project, and the project is not located in a dam inundation zone.

Direct Impacts

Impact 3.11-1: Potential Impacts of Maintenance Dredging on Water Quality

No Action Alternative

Regular maintenance dredging is not currently required to maintain operations at existing Gates B and E. Because patterns of sediment accumulation in the area of the Downtown San Francisco Ferry Terminal (Ferry Terminal) would be expected to be similar to historically observed patterns, regular maintenance dredging would not be anticipated for the No Action Alternative. Therefore, there would be no impact.

Action Alternative

For the Action Alternative, some dredging would likely be required on a regular maintenance cycle beneath the floats at the new Gates F and G, due to their proximity to the Pier 14 breakwater. It is expected that this minor maintenance dredging would be required at Gates F and G every 3 to 4 years, and would require removal of approximately 5,000 to 10,000 cubic yards (cy) of material. Estimated total volume of material over 50 years of operations would be 62,500 to 166,650 cy. It is not anticipated that a regular maintenance cycle of dredging would be required at Gate A.

In 1994, the U.S. EPA designated the "Deep Ocean Disposal Site," which is 50 miles outside of the Golden Gate. The U.S. EPA manages the site and has set a yearly capacity of 4.8 million cubic yards of dredged material (BCDC, 2008). There are also four disposal sites in the San Francisco Bay Estuary, including the Suisun Bay Channel, Alcatraz Island, San Pablo Bay, and Carquinez Strait. The volume of dredged material that would require disposal would be negligible compared to the total yearly capacity of these disposal sites (i.e., 10,000 cy, compared to more than 7 million cy or approximately 0.1 percent).

Dredging and disposal of dredged materials would be conducted in cooperation with the San Francisco DMMO. Coordination through the DMMO addresses (1) a Section 404 or Section 10 dredging authorization by the San Francisco District of the Corps; (2) an administrative dredging permit from the BCDC; (3) the San Francisco RWQCB water quality certification or waste discharge requirements; and (4) a dredging project lease from the CSLC (if required). The Water Emergency Transportation Authority (WETA) would either acquire and comply with the requirements of the Dredging – Dredge Material Reuse/Disposal project-specific permit that would be issued by the Corps, or coordinate with the Port to manage dredging and dredge spoils disposal under an existing applicable Corps permit for the Port's ongoing maintenance dredging. Requirements would include development of a sampling plan, sediment characterization, a sediment removal plan, and disposal in accordance with the Long-Term Management Strategy to ensure beneficial reuse, as appropriate. The permits issued by the DMMO will require dredging BMPs, which may include scheduling of dredging operations to avoid adverse effects on local biological resources (e.g., during spawning periods), use of silt curtains and/or gunderbooms, and mechanical/hydraulic dredge operation controls (e.g., reduced cutterhead rotation speeds, increased cycle times). Therefore, the impact is not anticipated to be adverse, and the effects to water quality would be minimal due to low volume of dredged material, infrequent dredging operations, and in-place requirements for implementation of dredging BMPs.

National Environmental Policy Act (NEPA) Determination. The project's impact to water quality as a result of maintenance dredging would not be adverse.

California Environmental Quality Act (CEQA) Determination. The project's potential to impact water quality as a result of maintenance dredging would be less than significant.

Impact 3.11-2: Potential Degradation of Water Quality Caused by Operation of Project Improvements

No Action Alternative

Stormwater runoff in the project area currently drains directly to San Francisco Bay, and would continue to do so under the No Action Alternative. There would be no physical changes, and WETA would continue to operate the facilities in compliance with the Port's Stormwater Management Program. WETA would continue to perform regular maintenance and cleaning of the existing facilities (e.g., gates), as well as general site maintenance activities (e.g., wash-down; litter removal, and trash receptacle management). As part of the No Action Alternative, there would be increases in the number of vessels and passengers using the existing facilities. However, WETA would implement BMPs to prevent and/or minimize the discharge of pollutants (e.g., fuel spills and litter) to San Francisco Bay. Therefore, there would be no change with respect to water quality impacts due to operations.

Action Alternative

Stormwater resulting from the project improvements would be managed in a manner consistent with the requirements of the Port's Stormwater Management Program, and the water quality policies set forth in the BCDC's San Francisco Bay Plan, as detailed below. The Port's Stormwater Management Program addresses federal CWA requirements.

The Embarcadero Plaza would be designed to drain predominantly to the west (to conform to the grade changes in the project area). Runoff would be conveyed to a stormwater treatment system, such as a media filter (or sand filter). Alternatively, a landscaped stormwater bioretention planter and water quality treatment area adjacent to the Embarcadero Promenade and the Pier 14 breakwater could be installed to treat stormwater from the Embarcadero Plaza before it enters San Francisco Bay. In addition, bioretention planters could be located along the southern side of the new Gate A Access Pier to capture stormwater from the new pier, and along the East Bayside Promenade to capture runoff from the new promenade. The bioretention planters would be placed so that their bottoms are above the highest estimated tide. The specific type, design, and location of stormwater filters and/or treatment units would be determined during final design in coordination with the Port and the permitting agencies.

In addition, the project is designed in response to state, regional, and local standards for stormwater management and water quality, and would also include sustainable construction materials and methods, as required by the San Francisco Green Building Ordinance, Chapter 13 of the San Francisco Building Code.

As a part of the final design, WETA would develop a stormwater control plan, in compliance with the Port's Stormwater Management Program. The Plan would designate responsibility and a schedule for regular maintenance and cleaning of the existing and new facilities (e.g., canopies), as well as general site maintenance activities (e.g., wash-down; litter removal and trash receptacle management; and lighting and landscape management).

The project would remove deck and pier areas that are or have been used for vehicle access and parking. These areas drain directly to San Francisco Bay, and were constructed prior to current federal and state water quality regulations. The removal of these auto-oriented and vehicular access areas would remove a potential source of pollutants (e.g., litter, oil, and grease from vehicles). In addition to removing these potential pollutant sources, all of the new deck and pile construction to be undertaken as part of the project would be designed according to current standards, based on the Stormwater Design Guidelines established by the Port.

As discussed in Section 3.12, Hazards and Hazardous Materials, the project would not include any regular use, storage, or transport of hazardous materials or chemicals, other than the fuel on the vessels. There would be no fueling at the project facilities.

BMPs would be implemented during operations. These would include, but would not be limited to, the following:

- Develop spill prevention and emergency response plan to handle potential fuel or other spills;
- Practice good housekeeping (e.g., provide covered trash bins on vessels and at the Ferry Terminal, store hazardous materials in centralized locations protected from rainfall); and
- Conduct regular sweeping of gates, plaza, and promenade.

The proposed project would be designed, constructed, and maintained to prevent or minimize the discharge of pollutants into San Francisco Bay. Effects on water quality during project operations would be minimal with implementation of BMPs and adherence to water quality regulations.

NEPA Determination. The project's impact to water quality as a result of project operation would not be adverse.

CEQA Determination. The project's potential to impact water quality as a result of project operation would be less than significant.

Impact 3.11-3: Substantially Increase San Francisco Bay Fill and Compromise Water Quality

No Action Alternative

The No Action Alternative would not place new fill[1] in San Francisco Bay, nor would it remove fill through demolition of existing deck and pile structures. Therefore, the No Action Alternative would have no impact on the amount of fill in San Francisco Bay, or policies related to water surface area, volume, and quality.

Action Alternative

The Action Alternative includes demolition existing deck and pile structures, and placement of new fill in San Francisco Bay. Table 2-2 summarizes the amount of fill removed by demolition, and the amount of fill added by new construction. The table also provides details on the type of fill, which includes fill in San Francisco Bay (i.e., due to piles), floating fill, and shadow fill.

Filling reduces the surface area of San Francisco Bay, and the volume of water in the Bay. This can reduce San Francisco Bay's ability to maintain adequate oxygen levels in the water, circulation, and tidal interchange. Both the Corps and BCDC have policies and regulations regarding the placement of new fill in San Francisco Bay.

In the North Basin, fill proposed by the project at Gate A includes a new access pier, gangway, float, and associated piles. A portion of the new fill would be considered replacement of existing fill, because it would be in the same location as the former Pier ½.[2] In the North Basin, there would be a total net

[1] In this context, "fill" refers to " earth or any other substance or material, including pilings or structures placed on pilings, and structures floating at some or all times and moored for extended periods, such as houseboats and floating docks...." Cal. Gov. Code Section 66632(a).

[2] As noted in Section 2.2, Pier ½ was removed as part of the America's Cup Project prior to the initiation of the proposed project.

increase in the amount of fill of approximately 15,495 square feet. With respect to the amount of fill into San Francisco Bay from piles, there would be a net increase of approximately 295 square feet.

In the South Basin, existing deck and pile structure would be removed (including Pier 2). Pier 2 is also designated for removal in BCDC's Special Area Plan (BCDC, 2000), and the Port has determined that the substructure is in need of repair. Fill would be associated with Gates F and G, the Embarcadero Plaza, and the East Bayside Promenade. There would be a net increase in the total amount of fill in the South Basin of approximately 24,440 square feet. With respect to the amount of fill into San Francisco Bay from piles, there would be a net increase of approximately 50 square feet.

Placement of new structures in navigable waters of the United States is regulated by the Corps in accordance with their authorization under Section 10 of the Rivers and Harbors Act of 1899, and under Section 404 of the CWA. The Section 10 regulations prohibit unauthorized obstruction or alteration of the navigable waters of the United States, and CWA Section 404 regulates the placement of fill material, including piers, into waters of the United States. As such, placement of new piles as part of the project would require a permit from the Corps pursuant to Section 10 and Section 404. The Corps would assess the public benefits that would result from the project, to justify and permit the placement of new fill. As described in detail in Impact 3.3-2, the proposed fill would be consistent with the Public Trust Doctrine, would provide public access to San Francisco Bay, would support the development of water-related uses, and would improve public transportation in the region, providing public benefit. The proposed project has also been designed to minimize the amount of fill necessary to meet the project's purpose and need. It is anticipated the Corps permit would require implementation of BMPs during construction as a part of the permit approval, as described under Impact 3.11-7.

As set forth in BCDC's policies and discussed in Section 3.2, Land Use, filling that reduces surface area and water volume should be allowed only for the purpose of providing substantial public benefits. Overall, the project would result in a total net increase in fill surface area of approximately 39,935 square feet, all of which is associated with water transit service, public access, and emergency evacuation needs. This overall increase accounts for fill in San Francisco Bay, floating fill, and shadow fill, and would be negligible in comparison to the total surface area of San Francisco Bay (i.e., approximately 0.9 acre of fill compared to approximately 327,000 acres of open waters in San Francisco Bay [BCDC, 2008]). With respect to fill in San Francisco Bay due to piles, there would be an overall net increase of approximately 345 square feet (or approximately 0.008 acre). With this slight increase in the amount of fill into San Francisco Bay, along with the design and arrangement of the piles and facilities, the project would not adversely affect oxygen levels, water circulation, or tidal interchange in San Francisco Bay. Therefore, the project would be consistent with the BCDC's Bay Plan policies with respect to water surface area, volume, and quality, and there would be no need to remove fill from elsewhere along the waterfront (also see discussion in Section 3.3, Land Use).

NEPA Determination. The project's potential to compromise water surface area, volume, and quality due to placement of fill in San Francisco Bay would not be adverse, and would be consistent with the Corps' Section 10 and Section 404 policies as well as BCDC's coastal zone management policies.

CEQA Determination. The project's potential to compromise water surface area, volume, and quality due to placement of fill in San Francisco Bay would be consistent with the Corps' Section 10 and Section 404 policies as well as BCDC's coastal zone management policies, and would be less than significant.

Impact 3.11-4: Potential Impact to People and Structures from Tsunami

As described in Section 3.11.2, the project area is located within the predicted tsunami inundation area, so that project operations, passengers, and project facilities could be impacted by a tsunami. Although the threat of a tsunami is considered to be a rare and infrequent event, CCSF has established a tsunami

warning system. This system consists of sirens and loudspeakers to warn people of an impending tsunami.

No Action Alternative

The No Action Alternative maintains the existing Ferry Terminal gate configuration and circulation areas, including the function, uses, and design of public spaces in the project area. No new gates or additional boarding capacity would be provided to accommodate new WETA services, or the expansion of existing WETA services, as part of the No Action Alternative. Similarly, there would be no implementation of circulation and boarding improvements to respond to emergency planning requirements. Under the No Action Alternative, it is expected that the existing gates and related facilities would be maintained in approximately their current condition, and their susceptibility to tsunami damage would be unchanged.

Action Alternative

The Action Alternative is the expansion and improvement of the Ferry Terminal at the Ferry Building, which includes construction of three new gates and overwater berthing facilities, in addition to supportive landside improvements such as improved passenger boarding areas, additional passenger waiting and queuing areas, and circulation improvements. The new deck and piles structures (i.e., Embarcadero Plaza, East Bayside Promenade, Gate A Access Pier, and North Basin Marginal Wharf improvements) would all be constructed to Essential Facility standards, thereby providing improved protection from a tsunami, and additional areas for emergency evacuation staging.

Activation of the existing San Francisco tsunami warning system would allow for evacuation of people prior to the arrival of a tsunami. Although the Action Alternative would include improvements to lessen potential damage, the likelihood of a tsunami occurring that could result in substantial damage to existing, improved, and new facilities is very low. Therefore, effects due to inundation or damage from a tsunami would be minimal.

NEPA Determination. The project's potential to impact operations, people, and structures from a tsunami would not be adverse.

CEQA Determination. The project's potential to impact operations, people, and structures from a tsunami would be less than significant.

Impact 3.11-5: Potential Flooding Impacts to New Project Facilities

No Action Alternative

The still water level (SWL) resulting from a 100-year storm event is estimated to be approximately 9.2 feet (mean lower low water [MLLW]) (ROMA, 2012). Taking into account a predicted sea-level rise of 16 inches by 2050 (BCDC, 2011), the SWL for the 100-year storm event is estimated to be 10.5 feet (MLLW). With the exception of the area near the Agriculture Building, which often experiences flooding during storm events, the existing features, including the Ferry Building, are above the 100-year SWL of 9.2 feet (MLLW). Recent preliminary FEMA flood maps (CCSF, 2008a) show the Agriculture Building and the apron around it as a Special Flood Hazard Area. Considering sea-level rise, the area near the Agriculture Building could be flooded during a 100-year event in 2050. The No Action Alternative would not result in any physical changes to the project area. The flooding and sea-level rise effects on operations would remain adverse.

Action Alternative

For the Action Alternative, the new gates would be built at 13 to 13.5 feet above MLLW, which would provide approximately 3.8 to 4.3 feet of freeboard above a 100-year storm SWL of 9.2 feet MLLW, or approximately 2.5 to 3 feet of freeboard above a 100-year storm SWL, with anticipated sea-level rise of 16 inches by 2050 (to an elevation of 10.5 feet MLLW). Floating berthing facilities would be used to accommodate tidal variations and sea-level rise.

Elevations for new decks would range from 12.2 feet to 13.2 feet MLLW, which would provide a freeboard allowance of 3 to 4 feet above the 100-year SWL of 9.2 feet, or 1.7 to 2.7 feet above the 100-year SWL, with sea-level rise in 2050 of 10.5 feet.

As part of the proposed project, a portion of the North Basin marginal wharf would be repaired and strengthened. At the Agriculture Building, the South Apron would be strengthened. However, the Agriculture building would remain as it is currently, susceptible to being flooded during a 100-year event in 2050.

NEPA Determination. Because the project would be designed to address flooding and sea-level rise, and to provide sufficient freeboard for new structures, effects on operations due to flooding would not be adverse.

CEQA Determination. The impacts from flooding and sea-level rise on the project's operations would be less than significant.

Impact 3.11-6: Potential Impacts to Shoreline and Project Area Facilities from Wake Wash

Vessel operations could create wakes that could potentially damage the shoreline and facilities at the Ferry Terminal, or damage other vessels (i.e., vessels docked, approaching, or leaving the other gates).

No Action Alternative

The existing shoreline within the project area consists of manmade structures, which would not be susceptible to erosion that could be induced by wake-wash waves. There would be no changes to the shoreline or facilities at the Ferry Terminal as part of the No Action Alternative, but there would be increased frequency of trips. As described in Table 2-3, Vessel Characteristics, new service would be provided by high-speed catamarans, which have lower wake heights and energies compared with conventional submerged-hull vessels. Currently, vessels are operated under self-imposed procedures to limit wave impacts to existing berthing facilities and vessels, and to approach berths slowly for passenger safety. The movement of ferry vessels is also very unlikely to affect the pilings under the Ferry Building or the Agriculture Building. There is no evidence that existing vessel traffic near the Ferry Building has affected the nearby structures. The piles supporting the existing buildings are designed to withstand extreme loads, such as those generated by winter storms and seismic events.[3] Because the vessels would have the same or lower design wash heights as those currently in use, effects on operations would be negligible and not adverse.

Action Alternative

As part of the Action Alternative, improvements would be made along the shoreline, and new gates would be installed. New and improved facilities would be designed to withstand wake-wash impacts. As

[3] The energy in waves is proportional to the square of the wave height. This means that the energy in an extreme 8-foot-high winter storm wave is 16 times greater than the energy in a nominal 2-foot-high wave from a vessel approaching the Ferry Terminal berths.

described above for the No Action Alternative, vessels would be operated to minimize wake-wash impacts. Because the vessels would have the same or lower design wash heights as those currently in use, effects on operations would be negligible and not adverse. Additionally, because vessels are shallow-draft and operate at slow speeds near the Ferry Terminal, there would be no scour impacts on Bay Area Rapid Transit facilities or other structures.

NEPA Determination. The project would not result in adverse impacts on the shoreline and vessels due to wake wash from operations.

CEQA Determination. The project's potential to impact the shoreline and vessels due to wake wash from operations would be less than significant.

Indirect Impacts

No indirect impacts have been identified.

Construction Impacts

The No Action Alternative would not result in any physical changes to the Ferry Terminal, and no construction activities would be required. Therefore, there would be no construction impacts to water quality or hydrology.

Impact 3.11-7: Potential Impacts of Dredging and Pile Removal and Placement Activities on Water Quality

Construction activities such as dredging, pile removal, and pile placement would disturb sediment and temporarily increase turbidity levels locally in San Francisco Bay.

The proposed project would require initial dredging of up to approximately 33,000 cy of sediment in the vicinity of Gates A, F, and G, and offsite reuse or disposal of the dredged sediment. It is estimated that dredging activities would occur over a 1-month period in the vicinity of Gate A; and over 2 months at Gates F and G. Dredging would cause a resuspension of sediments and a temporary decrease in water clarity locally. Some resuspension of sediments could also occur during pile removal and placement and other in-water activities that disturb the San Francisco Bay floor.

Excessive increases in turbidity could violate water quality objectives. In addition, turbidity reduces water clarity and light available for photosynthesis, and can have adverse effects on aquatic organisms (refer to Section 3.9 Biological Resources, for additional discussion). Concentrations of other pollutants (such as metals and certain pesticides) associated with sediment particles could also increase, because contaminated sediments are known to occur along the San Francisco Bay shoreline. Disturbance of contaminated sediment could impact water quality. Although these effects are short term and greatly diminish with distance from the activity, sediment and sediment-borne pollutants may be mobilized away from the project site under suitable hydrologic and hydraulic conditions.

All in-water construction activities would require permits and approvals to comply with Corps, U.S. EPA, RWQCB, and BCDC regulations and provisions. Compliance with these permits would require the implementation of BMPs that would avoid or reduce potential impacts related to resuspended sediments, as described in detail below.

As part of the permitting process, WETA would be required to:

- Prepare a sampling and analysis plan in accordance with U.S. EPA guidance to characterize the material to be dredged. The plan would describe sampling that would be conducted, and quality assurance procedures that would be implemented, to ensure the collection of data of appropriate

quality to support a decision regarding a suitable disposal method. The plan, which would be reviewed by all participating DMMO agencies, including the RWQCB, CSLC, the Corps, and the U.S. EPA, must be approved by the DMMO.

- Sample the sediments in accordance with the approved sampling and analysis plan, and submit a report to the DMMO documenting the sampling event. Based on this report, the DMMO would determine the suitable disposal method for the dredged sediments. WETA would then submit a Consolidated Dredging-Dredged Material Reuse-Disposal Application to the DMMO, detailing proposed disposal method and location. The DMMO agencies would review the permit application, and approve or deny the permit.

- Comply with the water quality protection BMPs specified by the DMMO agencies. The RWQCB water quality certification would specify methods for ensuring the protection of water quality during construction activities in San Francisco Bay. Any conditions of water quality certification would then be incorporated into the Corps Section 404/10 permit authorized for the project. In place of this water quality certification, the RWQCB could, at its discretion, issue waste discharge requirements specifying equivalent measures for the protection of water quality during construction. Also, the project sponsor would be required to adhere to policies and requirements set forth by BCDC in order to obtain a BCDC Major Permit to conduct construction and dredge and fill operations within BCDC's jurisdiction.

Dredging and pile-driving activities would result in short-term effects on water quality, which would be minimized with implementation of BMPs required through the adherence to water quality permits and approvals.

NEPA Determination. The project would not have adverse impacts to water quality as a result of dredging and pile removal and placement.

CEQA Determination. The project's potential to impact water quality as a result of dredging and pile removal and placement would be less than significant.

Impact 3.11-8: Potential Degradation of Water Quality Caused by Demolition and Construction Activities

The project proposes in- and over-water demolition and construction activities. However, because the project would not disturb more than 1 acre of land, it would not be subject to the requirements of the Construction General Permit.

These activities would include the use of a variety of diesel-powered equipment. Two types of barges would be required; one for materials storage, and one outfitted with demolition equipment (crane, clamshell bucket for pulling of piles, and excavator for removal of the deck). Diesel-powered tug boats would bring the barges to the project area, where they would be anchored. Spills of diesel fuel, hydraulic oil, and lubricants could occur, potentially impacting water quality. As discussed in Section 3.12, Hazards and Hazardous Materials, under Mitigation Measure HAZ-1, Prepare a Hazardous Materials Management Plan, WETA would prepare a spill prevention plan to address potential spills or exposure to contaminants, including measures for spill control, containment prevention, cleanup, wastewater management, and other foreseeable hazards. The equipment maintenance and refueling restrictions, hazardous materials measures, and site reclamation measures included in these measures would reduce the potential effects related to chemical spills to a negligible level.

Demolition activities would also require the removal of 350 piles and 20,500 square feet of decking in the South Basin. Piles and decking have been treated with creosote and may contain other potentially hazardous substances. During demolition and removal of these elements, it is possible that these

materials could be crushed and/or splintered as they are removed, potentially releasing into the water broken fragments and/or debris that contain creosote or other potentially hazardous substances.

Construction activities would include placement of concrete or steel piles and cast-in-place or precast concrete decking in both the North Basin and South Basin. These construction activities could place wet and/or fresh concrete and potentially other caustic cementitious materials (e.g., mortar, grout, cement, or slurry) directly over San Francisco Bay. Direct water contact with wet cement and/or discharges of cement washout wastewater can result in substantially increased pH levels and other water quality degradation.

Trash and sanitary wastes are other common sources of potentially harmful materials on construction sites. In addition, construction equipment, materials, and demolition debris could be on site during construction. Stormwater would likely come into contact with these materials and equipment, which could entrain pollutants that could be discharged to San Francisco Bay. The potential for degradation of water quality from discharge of construction-related materials and chemicals, either directly or conveyed via stormwater discharges, could be substantial.

Project construction would, however, require compliance with the 401 Certification, 404 Corps Permit, Section 10 Corps Permit, and a BCDC Major Permit. These regulatory requirements would establish BMPs designed to protect water quality for all demolition and construction activities, including work over water, such as:

- Training workers to identify and prevent releases of pollutants to working surfaces or directly to San Francisco Bay;
- Using containment booms to capture any pile fragments and floating demolition debris, or other measures (as required by the resource agencies) to contained suspended sediment;
- Storing hazardous materials in centralized areas that are protected from contact with stormwater, and are provided with secondary containment;
- Collecting solid waste in designated areas, and storing it in watertight containers in a covered area, or with secondary containment;
- Removing solid waste from the site regularly;
- Using drip pans and absorbent materials for equipment and vehicles, and ensuring that an adequate supply of spill cleanup materials is available;
- Maintaining all vehicles and equipment in good working order with no observable leaks or drips;
- Identifying types of spill control measures to be employed, including the storage of such materials and equipment, and ensuring that staff is trained regarding the use of the materials, deployment and access of control measures, and reporting measures; and
- Controlling discharge of cement and concrete materials and washwater, and limiting direct contact of freshly poured concrete with San Francisco Bay.

The potential effects on water quality from demolition and construction activities would be minimized with implementation of BMPs, and adherence to water quality permits and approvals.

NEPA Determination. The project's potential to impact water quality as a result of in-water and over-water demolition and construction activities would not be adverse.

CEQA Determination. The project's potential to impact water quality as a result of in-water and over-water demolition and construction activities would be less than significant.

Cumulative Impacts

Impact 3.11-9: Potential to Result in Cumulative Impacts to Hydrology or Water Quality

The geographic area of potential water quality and hydrology cumulative impacts is the central San Francisco Bay, which is identified as an impaired water body on the basis of several compounds and parameters.

The proposed project would result in water quality impacts related to construction activities in and over the waters of San Francisco Bay, including dredging. Other projects listed in Table 3.1-1 that are located along the waterfront, such as the America's Cup Project waterfront improvements, Port maintenance dredging, the Bay Bridge Seismic Safety Project, the Pier 36/Brannan Street Wharf project, and the Pier 15 to 17 Exploratorium Relocation Project, could also involve similar activities that could affect water quality in central San Francisco Bay. Water quality impacts could include increases in turbidity; disturbance and release of contaminated sediments; or accidental release of hazardous materials such as diesel fuel from construction equipment. The in- and over-water construction activities associated with these projects could result in potentially adverse cumulative water impacts.

The project's contribution to cumulative impacts from construction would not be cumulatively considerable, however, because water quality impacts related to the proposed project construction activities would be temporary, and WETA would implement water quality control measures required for compliance with existing regulations and required permits from the Corps, RWQCB, and BCDC, minimizing any potential for the project to adversely affect water quality. In addition, WETA would implement Mitigation Measure HAZ-1, implementation of a hazardous material management program, to further reduce the risk that construction activities could affect water quality.

During operations, the proposed project could result in water quality impacts to San Francisco Bay from maintenance dredging, stormwater discharges, spills, or litter. Similar activities that could affect water quality would be associated with the America's Cup Project waterfront improvements, Port maintenance dredging, the Bay Bridge Seismic Safety Project, the Pier 36/Brannan Street Wharf project, and the Pier 15 to 17 Exploratorium Relocation Project. Water quality impacts could include increases in turbidity; disturbance and release of contaminated sediments; or discharge of contaminants in stormwater. Water quality impacts from these projects could result in a potentially adverse cumulative water impacts. However, maintenance dredging activities for the project would be small and infrequent (5,000 to 10,000 cubic yards of material every 3 or 4 years) in comparison to the ongoing maintenance dredging programs in San Francisco Bay. The proposed project would be designed to capture and treat all stormwater runoff in compliance with the necessary permits. In addition, the proposed project would not require any fueling or sanitary waste disposal in the project area, and would implement a site maintenance plan to reduce litter. Therefore, the potential for project operations to adversely affect water quality would be small, and the proposed project's contribution to cumulative impacts from operations would not be cumulatively considerable.

The proposed project would result in the additional of permanent fill in San Francisco Bay. Projects, such as the America's Cup project, San Francisco/Oakland Bay Bridge Seismic Safety projects, Brannan Street Wharf, Pier 27 Cruise Ship Terminal project, the Piers 15 and 17 Exploratorium Relocation, and Pier 70 Area (listed in Table 3.1-1), could also result in additional fill in San Francisco Bay, which could cumulatively affect the hydrology and surface area of the Bay. However the amount of fill that could result from these projects is still small when compared to the overall surface area of San Francisco Bay, and would therefore be unlikely to affect the hydrology and water quality of the Bay as a whole. In addition, BCDC regulates the placement of new fill in San Francisco Bay to ensure that changes in Bay

fill are consistent with the Bay Plan. As part of the permitting and approvals process for individual projects, potential fill impacts would be evaluated and project consistency with the BCDC plans would be ensured by the lead agency and BCDC. Mitigation of proposed new fill would be required, as necessary. Therefore, the reasonably foreseeable projects, in combination with the proposed project, would not result in adverse cumulative impacts related to an increase in fill in San Francisco Bay.

Impacts related to tsunami inundation, flooding, sea-level rise, or wake wash from vessels would be site-specific, and the project's impact would not be adverse; therefore, the proposed project would not contribute to cumulative impacts related to these topics during project operations.

NEPA Determination. The proposed project, in combination with other reasonably foreseeable projects, has the potential to adversely cumulatively impact water quality. However, the project's contribution to cumulative water quality impacts would not be considerable.

CEQA Determination. The proposed project, in combination with other reasonably foreseeable projects, has the potential to cumulatively impact water quality. However, the project's contribution to cumulative water quality impacts would not be considerable, and therefore would be less than significant.

3.11.4 Mitigation Measures

Mitigation measures are not required for hydrology and water quality.

3.12 HAZARDS AND HAZARDOUS MATERIALS

3.12.1 Introduction to the Analysis

This section describes the potential for hazardous materials[1] and other hazards to affect human health and safety as a result of construction and operation of the proposed project. Operational effects of the proposed project would be related to the use of small quantities of diesel fuel to power a back-up generator for the gates. Construction effects would be related to demolition of existing facilities. Impacts related to release of fuel from vessels during operation, dredging, and driving piles into San Francisco Bay sediments are discussed in Section 3.11, Water Resources. Potential public health and safety impacts from implementation of the proposed project would include accidental release of hazardous materials used and stored during construction activities, or during demolition, transport, and disposal of structures containing hazardous materials. These project impacts would be reduced through implementation of Mitigation Measure HAZ-1. Additionally, the No Action Alternative was identified as having the potential to result in an adverse impact, because it would impede the Water Emergency Transportation Authority's (WETA) ability to meet its own emergency operation and evacuation responsibilities during a major catastrophic event.

3.12.2 Affected Environment

This section summarizes the hazardous materials setting and regulatory framework for hazardous materials and hazardous waste. The evaluation was based on the Phase I Environmental Site Assessment (ESA) prepared for the project area (BASELINE, 2012), other published materials, a site reconnaissance, and interviews with persons knowledgeable about the site.

Hazardous Materials Setting

This section describes the existing physical hazardous materials setting at the Downtown San Francisco Ferry Terminal (Ferry Terminal). Water transit facilities at the end of Market Street in San Francisco have been in place since at least 1887, and the use, storage, and generation of hazardous waste have occurred throughout those years of operation. A Phase I ESA for the project site has been completed (BASELINE, 2012). The findings from this investigation, as they relate to soil, groundwater, and surface water quality, are described below.

The Phase I ESA was completed for the Downtown San Francisco Ferry Terminal Expansion Project (project), and included a review of historical land use information such as historical topographic maps, aerial photographs, and Sanborn Maps; a visual site reconnaissance; an interview with a site owner representative; a review of environmental records from local, state, and federal sources provided by Environmental Data Resources, Inc. (EDR); and the development of recommendations for further actions.[2] The findings from these activities are described below.

- **Historical Land Uses and Associated Hazardous Materials Uses at and Adjacent to the Ferry Terminal.** Water transit facilities at the Ferry Terminal have been in place since at least 1887, when eight ferry slips were in use. The current San Francisco Ferry Building (Ferry Building) was built

[1] The California Health and Safety Code defines a hazardous material as, "...any material that, because of its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety, or to the environment. Hazardous materials include, but are not limited to, hazardous substances, hazardous waste, radioactive materials, and any material which a handler or the administering agency has a reasonable basis for believing that it would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment" (California Health and Safety Code, Section 25501).

[2] Phase I Environmental Site Assessment activities were performed in accordance with the *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*, established by the American Society for Testing and Materials International in Method E1527-05 (ASTM Standard).

between 1896 and 1898 on a foundation of wood piles and concrete arches on the San Francisco Bay side of a seawall (Olmsted and Port, 1998). The seawall is along the western side of the Ferry Building. Former tidal flats west of the seawall were reclaimed by infilling sometime between 1851 and 1898.

The Ferry Building survived the 1906 earthquake, although most of the downtown commercial buildings at the end of Market Street were destroyed. Reconstruction of the downtown area included an electric streetcar route terminating at the Ferry Building, and stores and hotels near the end of Market Street. Mission Street Wharf No. 1, also known as Pier No. 2, was largely removed by 1913, and the Agriculture Building was built in 1915. Wharf configurations have changed many times since 1898, and the number of ferry slips has ranged from eight to eleven, until the Ferry Plaza was constructed over the Transbay Tube in the 1960s.

Because water transit service was initiated in the late 1880s, it is likely that hazardous materials were used on site. Historical records of the identity, location, and quantities of hazardous materials used were not available for review during the Phase I ESA. Historic site uses that may have required the use and storage of hazardous materials include the generation of steam heat; the fueling of fire pumps with fuel oil; and the presence of a planing mill, testing laboratory, machine shop, paint shop, and auto service facility. Additionally, vessels may have fueled at the Ferry Terminal in the past. Historic hazardous materials use may have included petroleum hydrocarbons, volatile organics, semi-volatile organics, and metals, and may have affected sediment below the proposed project site.

Historical land uses adjacent to the project site include commercial service-oriented businesses (including a facility for automotive repair and fueling, a drug store, post office, restaurant, and dry cleaner), some of which may have used hazardous materials, including petroleum hydrocarbons, volatile organics, semi-volatile organics, and metals.

- **Site Reconnaissance.** A visual reconnaissance of publicly accessible areas of the project area, project site, and adjacent properties was conducted for the Phase I ESA in June 2011. At the time of the site visit, the restaurants and culinary stores on the ground floor of the Ferry Building were crowded with customers. Gates B, C, D, and E were behind the Ferry Building. Two additional restaurants were present on the Ferry Plaza and Pier 2. Some delivery vehicles were present, and cars were parked in Sinbad's Restaurant parking lot on Pier 2. The open water area, surrounded by railings, was present just south of the Ferry Building, and the Agriculture Building was south of the lagoon. Pier ½, north of the Ferry Building, was not open to the public. Multiple old pilings indicated the former extent of Pier ½.[3]

  Adjacent land uses are similar to historical land uses, as described above. Outside the main Ferry Building entrance is a wide sidewalk (the Embarcadero Promenade), The Embarcadero (a divided roadway), and streetcar rails with a platform bisecting The Embarcadero. High-rise office buildings and parks of downtown San Francisco are present west of The Embarcadero. Pier 1, north of Pier ½, was developed as the Port of San Francisco (Port) offices. Pier 14 is south of the project site. No evidence of significant quantities of hazardous materials use or storage was observed during the site visit, with the exception of fuel tanks carried by the vessels, and pilings covered with creosote.

  There are two curb cuts and driveways south of the Ferry Building that provide emergency vehicle access to the eastern side of the Ferry Building and the facilities located on the Ferry Plaza (Gates C and D, the Carnelian by the Bay, and Bay Area Rapid Transit [BART] facilities). The driveway just south of the Ferry Building also serves as a fire lane. Two additional curb cuts and emergency vehicle access points are north of the Ferry Building.

[3] As discussed in Section 2.2 of Chapter 2, Alternatives, Pier ½ and the restaurant on Pier 2, Sinbad's, will be removed as a part of the America's Cup Project prior to initiation of Water Emergency Transportation Authority's proposed project. At the time of the site reconnaissance, the structures were located within the project area, so they are discussed here.

BART has evacuation facilities on the Ferry Plaza; in the case of an emergency in the Transbay Tube, passengers would be evacuated to the Ferry Plaza.

- **Interviews with Persons Knowledgeable about the Site.** A Port representative, Ms. Carol Bach, was interviewed on June 13, 2011, during the site reconnaissance, and provided the following information (BASELINE, 2012). Ms. Bach was not aware of hazardous materials use or storage on site, with the exception of creosote-coated pilings, and two 70-gallon diesel fuel tanks to power back-up generators for the float system for each floating gate (Gates B and E). Vessels are not currently fueled on site, and historical fueling procedures were not known. The Ferry Building has had some issues with broken sewage pipes. Sewage discharges landward into the City and County of San Francisco (CCSF) combined storm and sewage system. Unauthorized graywater discharges into San Francisco Bay by restaurants have been reported. The COSCO Busan oil spill of November 2007, which originated at the San Francisco-Oakland Bay Bridge, reached the Ferry Terminal, and oil (bunker fuel) that adhered to pilings was cleaned up by the Coast Guard.

- **Regulatory Agency Database Review.** A search of regulatory agency databases pertaining to hazardous material use and releases on properties at and near the project site was completed for the Phase I ESA (BASELINE, 2012). The search included sites within 750 feet of the project site that were topographically upgradient (i.e., where a release could affect the project site). The project site and 27 other sites were identified on regulatory agency databases for hazardous materials storage, generation, or releases. The majority of these sites was listed due to hazardous materials use with no record of hazardous materials release. Six of those sites, including the proposed project site, were listed as having had a hazardous materials release from underground storage tanks (USTs) in the past. All six sites have been closed by regulatory agencies, indicating remediation has been completed or is not required. None of these sites with hazardous materials releases would be expected to impact sediment or surface water beneath the proposed project site.

  The project site was listed on several databases related to USTs, oil spills, hazardous materials disposal, and air pollution. These listings are provided in Table 3.12-1.

  There were six oil spills listed by EDR that originated from the Ferry Terminal area. These were releases of unidentified oil and hydraulic oil to San Francisco Bay waters. Because these spills affected surface water at the project site, they have the potential to have affected sediments below the project site.

  Additional spills originating off site also have the potential to affect sediments below the project site. An oil spill on February 11, 1987, occurred between San Francisco Bay and the Ferry Building, and was listed by EDR. The COSCO Busan oil spill of November 2007 reached the project site, and was cleaned up by the Coast Guard, as reported by Port staff (Bach, 2011).

San Francisco Bay Sediment Sampling

The San Francisco Estuary Institute has a regional monitoring station approximately 2,000 feet south of the Ferry Building and north of the Bay Bridge in San Francisco Bay. Sediment sampled at this location regularly tests positive for polynuclear aromatic hydrocarbons (PAHs), which are associated with petroleum hydrocarbon use, including wood piling preservation (SFEI, 2011).

Chemical testing of sediments below the project site was conducted in 1995. Results of these studies were summarized in the Environmental Assessment and Initial Study prepared in support of the first phase of the proposed project in 1997 (SF Planning et al., 1997). Samples from the north and south terminal areas were reported to contain concentrations of PAH that were elevated, but considered typical of industrial concentrations in San Francisco Bay. One sample collected alongside Pier 1 and near the shoreline showed "very severe" PAH contamination (e.g., naphthalene, acenaphthene, phenanthrene, fluoranthene, and pyrene).

Table 3.12-1
Hazardous Materials Use or Release Listings for the Downtown San Francisco Ferry Terminal Expansion Project Site

Site Name	Site Address	Database	Reason for Listing	Listing Information
Ferry Building/Port Administration	Ferry Building Embarcadero/1 Ferry Building	HIST CORTESE; LUST; CA FID UST; SWEEPS UST; UST	Leaking UST and registered UST	One 500-gallon kerosene or gasoline UST was near the sidewalk in front of the Ferry Building, on the southwestern side of the building. The UST was removed in September 1987, and a soil sample from the bottom of the 6-foot-deep excavation tested positive for kerosene. Groundwater was not encountered. The case was closed in August 1996, indicating remediation was completed or not required. A registered UST with no record of violations was closed at the site on March 20, 1988.
Ferry Terminal Plaza	Ferry Terminal Plaza	ERNS	Oil or hazardous substance release	A release of oil to San Francisco Bay waters was reported on November 11, 2008. The sheen length was 200 feet. A release of hydraulic oil to San Francisco Bay waters from the gangway system was reported on January 14, 2009.
Ferry Terminal	Ferry Terminal	ERNS	Oil or hazardous substance release	A red sheen on San Francisco Bay was reported on June 16, 2006.
San Francisco Bay Larkspur Ferry Terminal	San Francisco Bay Larkspur Ferry Terminal	ERNS	Oil or hazardous substance release	Heavy, black oil was spilled on San Francisco Bay on August 7, 1994.
Offshore at Ferry Building	Offshore at Ferry Building	ERNS	Oil or hazardous substance release	An oil spill with a sheen on the Pacific Ocean was reported on April 13, 1992.
Pier 2 – Golden Gate Terminal Ferry Ramp	Pier 2 – Golden Gate Terminal Ferry Ramp	ERNS	Oil or hazardous substance release	Several hundred gallons of hydraulic fluid were spilled into San Francisco Bay on May 2, 1990.
Ferry Building/Sinbad's Restaurant	Ferry Building/Sinbad's Restaurant	ERNS	Oil or hazardous substance release	Oil was spilled on San Francisco Bay. A sheen two to three blocks long was reported on January 22, 1987.
BART	1 Ferry Building	HAZNET	Manifested Disposal of Hazardous Waste	Organic and inorganic solid waste was disposed of under manifest in 2005, 2008, and 2009.
Ferry Building Investors	Ferry Building	EMI	Air Pollution Emission Database	This facility was listed with air pollution emissions in 2004.
Equity Office	Ferry Building	EMI	Air Pollution Emission Database	This facility was listed with air pollution emissions in 2006 and 2007.

Sources: EDR, 2011; and SWRCB, 2011. http://geotracker.waterboards.ca.gov.

Notes:

BART = Bay Area Rapid Transit District
UST = underground storage tank
Database Key:

CA FID UST = a State Water Resources Control Board database of facilities that contain active and inactive UST locations. The database was last updated in 1994.
EMI = the California Air Resources Board "Emissions Inventory Data" of air pollution emissions.
ERNS = Emergency Response Notification System of oil and hazardous substance release reported to the National Response Center, U.S. EPA, or U.S. Coast Guard.
HAZNET = a Department of Toxic Substances Control (DTSC) database of sites that generate hazardous waste manifests to track disposal of hazardous waste.
HIST CORTESE = a listing of "hazardous waste and substances sites" designated by the State Water Resources Control Board, the Integrated Waste Board, and the DTSC. This listing is no longer updated by the state agencies.
LUST = state database of leaking petroleum UST sites.
SWEEPS UST = a State Water Resources Control Board database of USTs. The database was last updated in the early 1980s.
UST = a State Water Resources Control Board database of sites that contains registered USTs. The database was last updated in October 2010.

Previous Asbestos and Lead Sampling

The Port maintains a listing of environmental reports for the project site. Although asbestos and lead sampling reports were listed for the Ferry Building and the Agriculture Building, no reports were listed on the portion of the project site proposed for demolition (the deck and pile structures between the Ferry Building and Agriculture Building). Structures constructed prior to 1981 may contain asbestos, and structures painted prior to 1978 may have lead paint. Based on the age of some of the deck and pile structures to be disturbed (demolished or repaired) by the project, asbestos and lead could be present on site.

Preserved Wood

Piles in the project area (i.e., those that support the existing piers), as well as cluster piles east of Pier ½, may have been preserved with creosote. The Port listing of environmental reports did not include chemical analysis of the piles.

Regulatory Framework

The following section describes the regulatory framework for hazardous materials and hazardous waste management at the Ferry Terminal. Nonhazardous solid waste is discussed in Section 3.15, Utilities and Public Services. Several laws and regulations at the federal, state, and local levels affect the management of hazardous materials and hazardous wastes.[4]

Federal

United States Environmental Protection Agency

The U.S. Environmental Protection Agency (U.S. EPA) is the lead agency responsible for enforcing federal laws and regulations governing hazardous materials that affect public health or the environment. The major federal laws and regulations enforced by the U.S. EPA include: the Resource Conservation and Recovery Act; the Toxic Substances Control Act; the Comprehensive Environmental Response, Compensation and Liability Act; and the Superfund Amendments and Reauthorization Act. In California, the U.S. EPA has granted most enforcement authority over federal hazardous materials regulations to the California Environmental Protection Agency (Cal/EPA).

U.S. Army Corps of Engineers

The U.S. Army Corps of Engineers (Corps) regulates water quality and potentially hazardous discharges through the Rivers and Harbors Acts of 1890 (superseded) and 1899 (33 United States Code 401, et seq.), and the Clean Water Act (33 United States Code § 1257, et seq.). The provisions of each are described in more detail in Section 3.11, Hydrology and Water Quality.

State

California Environmental Protection Agency

Under the authority of Cal/EPA, the Department of Toxic Substances Control (DTSC) and the San Francisco Bay Regional Water Quality Control Board (RWQCB) are responsible for overseeing the cleanup of contaminated sites in the City of San Francisco. The DTSC also regulates disposal of hazardous wastes under California's Hazardous Waste Control Law.

[4] "Hazardous waste is a waste with properties that make it potentially dangerous or harmful to human health or the environment" (DTSC, 2011).

The owner of the property where hazardous waste is generated must have a Hazardous Waste Generator Number assigned by and registered with DTSC. The contractor and/or hauler of the material is required to file a Hazardous Waste Manifest that details the hauling and disposal of site hazardous materials.

Wood treated with preservation chemicals and removed from service contains hazardous chemicals that pose a risk to human health and the environment. The DTSC has developed *Alternative Management Standards for Treated Wood Waste*, which simplify and facilitate safe and economical waste disposal (DTSC, 2008). Structures in the project area contain treated wood, and their demolition and disposal would be subject to DTSC's guidelines.

Fluorescent lighting tubes and ballasts, computer displays, and several other common items containing hazardous materials are regulated as "universal wastes" by Cal/EPA. These building materials may be encountered by workers prior to building demolition and renovation activities. Universal waste regulations allow common, low-hazard wastes to be managed under less stringent requirements than other hazardous wastes.

California Division of Occupational Safety and Health

The California Department of Industrial Relations, Division of Occupational Safety and Health (Cal/OSHA), enforces state worker health and safety regulations related to construction activities. Regulations include exposure limits, protective clothing, and training requirements to prevent exposure to hazardous materials. Cal/OSHA also enforces occupational health and safety regulations specific to lead and asbestos investigations and abatement that equal or exceed federal requirements.[5] Where there is asbestos-related work involving 100 square feet or more of asbestos- containing material, asbestos abatement contractors must follow state regulations contained in 8 California Code of Regulations 1529 and 8 California Code of Regulations 341.6 through 341.14. Asbestos removal contractors must be certified as such by the Contractors Licensing Board of the State of California. Workers conducting asbestos abatement must be trained in accordance with state and federal Division of Occupational Safety and Health regulations, and the local office of Cal/OSHA must be notified of proposed asbestos abatement. Due to their age, some of the structures proposed for demolition for the project may contain asbestos.

Regional

Dredged Material Management Office

In 1990, the U.S. EPA, the Corps, the RWQCB, San Francisco Bay Conservation and Development Commission (BCDC), and the State Water Resources Control Board joined with navigation interests, fishing groups, environmental organizations, and other interested parties to form the Long-Term Management Strategy (LTMS) program for dredged material from San Francisco Bay. The LTMS provides the basis for uniform federal and state dredged material disposal policies and regulations. The California Coastal Conservancy, California Department of Fish and Wildlife, and U.S. Fish and Wildlife Service also participate in the LTMS, as necessary, to implement beneficial reuse options. The goals of the LTMS are to manage dredging and disposal in an economically and environmentally sound manner, maximize the beneficial use of dredged material, and develop a coordinated permit application review process for dredging and disposal projects. Specific guidance for conducting dredging and material disposal activities is summarized in the *Long-Term Management Strategy Management Plan* (Corps, U.S. EPA, BCDC, and RWQCB, 2001).

The Dredged Material Management Office (DMMO) was established as part of the LTMS to consolidate the processing of dredging permit applications by the staff of the LTMS agencies and the State Lands

[5] California Code of Regulations, Title 8, Sections 1529, 1532.1, and 5192.

Commission. The DMMO provides a single application form that meets the requirements of its member agencies, and unifies processing of applications for dredging permits. The proposed project would involve both construction and maintenance dredging. These activities would require permitting from the DMMO.

The process for obtaining approvals for dredging or dredge materials disposal has three phases: (1) suitability determination; (2) permit process; and (3) episode approval. The suitability determination process occurs at the DMMO level. The DMMO member agencies make a joint recommendation to the individual member agencies on whether the sediments to be dredged are appropriate, in terms of potential for environmental impacts, for the proposed disposal or reuse site. The recommendation is usually based on the results of sediment testing. The applicant must submit results from recent sediment testing, or submit sufficient data to support a finding by the agencies that the sediments are suitable for the proposed disposal environment. The applicant should submit to the DMMO either a sediment Sampling and Analysis Plan and Quality Assurance Project Plan, or a written request (with supporting information) for an exclusion from testing requirements based on factors such as previous testing history and physical characteristics of the material proposed for dredging. The applicant must submit the sampling results to the DMMO for review, and the DMMO will make a determination about where the materials can be disposed.

Section 404 of the Clean Water Act (CWA) and BCDC's Bay Plan do not authorize aquatic disposal of dredged material unless an analysis of potential alternatives is first performed, and the alternatives prove to be either environmentally unacceptable or infeasible. To be approved under Section 404 of the CWA, projects proposing to discharge dredged material to waters of the United States must be shown to have no practicable alternative to the proposed discharge that would have less impact on the aquatic ecosystem. Applicants for permits for such discharges must submit a written analysis of the alternatives to the DMMO.

Although the DMMO provides initial review of permit applications and suitability recommendations, applicants must eventually obtain separate approval from the appropriate DMMO member agencies (such as a CWA Section 404 Permit from the Corps, a CWA Section 401 Certification from the RWQCB, and approval by BCDC); each agency issues permit conditions and specific requirements about how the project is to be performed.

Some permits for maintenance dredging projects authorize multiple dredging and disposal episodes over a period of several years. Such permits require that permittees obtain formal approval, after a recommendation of suitability by the DMMO, for each dredging episode under the permit. Episode approvals, when appropriate, are issued by the individual DMMO member agencies.

Local

San Francisco Department of Public Health

The San Francisco Department of Public Health (SFDPH) enforces most regulations pertaining to hazardous materials in the City of San Francisco. The SFDPH regulates site mitigation under their Site Mitigation Program, and the SFDPH Hazardous Materials Unified Program Agency (HMUPA) regulates hazardous waste storage, generation, and accidental release under the Certified Unified Program Agency program.[6] The hazardous materials programs administered by the SFDPH and potentially applicable to the project are described briefly below.

[6] The Certified Unified Program Agency program was established under California Senate Bill 1082 to reduce the cost and improve the efficiency of hazardous materials regulations.

- **Hazardous Materials Plan.** Businesses that handle hazardous materials in excess of specified quantities must report their chemical inventories to the HMUPA by preparing a Hazardous Materials Plan, to inform the community about chemical use, storage, handling, and disposal practices. The Hazardous Materials Plan is also intended to provide essential information to fire fighters, health officials, planners, elected officials, workers, and their representatives so that they can plan for and respond to potential exposures to hazardous materials. Any hazardous materials use, storage, handling, or disposal by the project will be subject to these reporting requirements.

- **California Accidental Release Prevention Program.** Under this program, businesses that use large quantities of acutely hazardous materials must prepare a detailed engineering analysis of the potential accident factors present at a business, and the mitigation measures that can be implemented to reduce this accident potential.

City of San Francisco Maher Ordinance

CCSF has adopted an ordinance (Maher Ordinance, 253-86, signed by the mayor on June 27, 1986) that requires analysis of soil for chemical compounds in specified areas, and on sites specifically designated by the Director of Public Works, when more than 50 cubic yards of soil are to be disturbed. The ordinance includes sites bayward of the 1851 high tide line (SFDPH, 2011). Although the project site is bayward of the 1851 high tide line, it is east of the historic fill area bounded by the seawall. According to the SFDPH, the Maher Ordinance was not intended to apply to sediments, only manmade fills; therefore, the proposed project is not subject to Maher Ordinance requirements (Cushing, 2011).

Bay Area Air Quality Management District

Section 19827.5 of the California Health and Safety Code, adopted January 1, 1991, requires that local agencies not issue demolition or alteration permits until an applicant has demonstrated compliance with notification requirements under applicable federal regulations regarding hazardous air pollutants, including asbestos. The Bay Area Air Quality Management District (BAAQMD) has the authority to regulate airborne pollutants, including asbestos, through both inspection and law enforcement, and is to be notified 10 days in advance of any proposed demolition or abatement work.

Notification includes the names and addresses of operations and persons responsible; description and location of the structure to be demolished/altered, including size, age, and prior use, and the approximate amount of friable asbestos; scheduled starting and completion dates of demolition or abatement; the nature of planned work and methods to be employed; the procedures to be employed to meet BAAQMD requirements; and the name and location of the waste disposal site to be used. The BAAQMD randomly inspects asbestos removal operations. In addition, the BAAQMD will inspect any removal operations for which a complaint has been received. Due to their age, some of the structures that would be demolished as part of the proposed project could contain asbestos.

Port of San Francisco

The Port has regulatory review responsibilities to ensure that new construction, alterations, and public improvements comply with applicable use, design review, environmental, and other government regulations. The Port requires compliance with their building code, and is the permitting agency for construction and demolition on Port property. The Port has the authority to require hazardous materials handling and storage plans.

3.12.3 Impact Evaluation

This section includes an analysis to determine if the project would:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials or wastes;
- Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment;
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within ¼ mile of an existing or proposed school;
- Create a significant hazard to the public or the environment from existing hazardous materials contamination by exposing future occupants or users of the site to contamination in excess of applicable environmental screening levels;
- Be located on a site that is included on a list of hazardous material sites compiled pursuant to Government Code Section 65962.5; and as a result, create a significant hazard to the public or the environment;
- Be located in an adopted airport land use plan for a public-use airport, resulting in a safety hazard for people residing and working in the project area;
- Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildland is adjacent to urbanized areas or where residences are intermixed with wildland; and
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

The following analysis evaluates the proposed project's potential effects related to hazards and hazardous materials. To determine potential impacts of the project related to hazards and hazardous materials, the project components were evaluated to determine their potential to cause workers, the public, and/or the environment to come into contact with hazardous materials during both the construction and operation periods. Available reports, maps, and other documents—including the Phase I Environmental Site Assessment for the project (BASELINE, 2012), and Hazardous Materials Plans for project area facilities, as available—were reviewed to identify potential hazards and hazardous materials in the project area. In addition, existing emergency response plans that involve the Ferry Terminal and the immediate vicinity were reviewed, if available. The project's potential to adversely affect adopted emergency response plans, both during construction and operation, was evaluated.

Demolition, construction, and operation activities would take place bayward of the seawall; therefore, the potential impacts related to release of hazardous materials to land are anticipated to not be adverse. Because demolition, construction, and operation activities would take place over water, releases of hazardous materials could adversely affect water quality in San Francisco Bay; these potential effects are discussed in Section 3.11, Water Resources. This section focuses on potential adverse effects to human health associated with hazardous materials handling.

In addition, the proposed project site is not in an area covered by an adopted airport land use plan; therefore, no adverse impacts would be expected. The project site is surrounded by urbanized areas and San Francisco Bay, and is not in a California Department of Forestry and Fire Protection fire hazard zone (CAL FIRE, 2007); therefore, no adverse impacts due to wildland fires would be expected.

Direct Impacts

Impact 3.12-1: Potential Public or Environmental Exposure from the Routine Transport, Use, and Disposal of Hazardous Materials

No Action Alternative

This alternative would not involve modification of the Ferry Terminal facilities. New and existing WETA services would be accommodated at the existing gates available to WETA at the Ferry Terminal (Gates B and E) without any changes or improvements. No changes to hazardous materials usage at the Ferry Terminal gates would be expected under the No Action Alternative.

Action Alternative

This alternative would include modification of the Ferry Terminal facilities. Impacts from hazardous materials release during operation at the proposed new gates (Gates A, F, and G) could occur.

Refueling is not currently conducted at the Ferry Terminal, and is not proposed by the project. However, emergency power would be provided on site through one centrally located back-up generator; diesel tanks for storage of fuel for the back-up generator may also be required. No other hazardous materials or fuels would be used or stored on site. If hazardous materials (i.e., diesel fuel), were used above CCSF's threshold quantities (500 pounds or 55 gallons), WETA would be required to comply with CCSF's hazardous materials handling requirements, specified in Article 21 of the San Francisco Health Code, and prepare a Hazardous Materials Plan as required by the San Francisco Department of Public Health. The use of a back-up generator would require a certificate of registration in accordance with additional regulations specified in Article 30 of the San Francisco Health Code. Transportation of hazardous materials such as diesel fuel is regulated by the California Highway Patrol and the California Department of Transportation. The proposed project would comply with these standards, including display of proper placards on vehicles containing hazardous materials, and appropriate licensing of drivers.

The Port would review and approve the project for a building permit before construction could commence. This review process would ensure compliance with the Port Building Code, and additional review by the Port Fire Marshall and Port's Environmental Specialist would ensure compliance with the Fire Code and environmental concerns pertinent to the Port's jurisdictional area. Depending on the nature and extent of potential environmental risk from ongoing operations, the Port may require the facility operator to develop an Operations Plan for review and approval by Port environmental staff. The Operations Plan would specify fuel use and storage procedures designed to prevent fuel spills while using or refilling the back-up generator, and would be a condition of the lease for the subject facility.

Implementation of these existing requirements would minimize potential exposure of site personnel and the public to routine transport, use, and disposal of hazardous materials, and would also protect against potential environmental contamination. Therefore, no adverse impact would be expected.

NEPA Determination. The project's impact on the public or the environment through the routine use, transport, or disposal of hazardous materials or wastes associated with operation activities would not be adverse.

California Environmental Quality Act (CEQA) Determination. The impact on the public or the environment through the routine use, transport, or disposal of hazardous materials or wastes associated with operation activities would be less than significant.

Impact 3.12-2: Project Would Be Included on a Government List of Hazardous Materials Sites

No Action Alternative

This alternative would not involve modification of the Ferry Terminal facilities. New and existing WETA services would be accommodated at the existing gates available to WETA at the Ferry Terminal (Gates B and E) without any changes or improvements. No changes to the location of the project on a government list of hazardous materials sites at the Ferry Terminal gates would be expected under the No Action Alternative.

Action Alternative

Hazardous materials have reportedly been released to soil and sediment at the project site from past and current site uses. The Ferry Building is on the State Water Resources Control Board Leaking Underground Storage Tank list; however, the case was closed in 1996, indicating remediation was complete or not required. Several oil spills were reported on the U.S. EPA Emergency Response Notification System list in the Ferry Terminal area from 1987 to 2008. The Phase I ESA prepared for the project in 2012 reported that no active investigations of hazardous materials release sites in the project site, or within 750 feet of the project site, were identified on the list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. Historical site uses may have affected sediment below the site, and elevated PAH concentrations in sediment below the site were reported in 1995 (BASELINE, 2012). These releases or potential releases are considered not adverse because regulatory agencies have not taken, or propose to take, enforcement action. Routine dredging and sediment disposal would be conducted in compliance with the 404 Corps Permit, as discussed in Section 3.11. Dredging and disposal of dredged materials would be conducted in coordination with the DMMO. WETA would either acquire (and comply with the requirements of) a Dredging – Dredge Material Reuse/Disposal project-specific permit that would be issued by the Corps, or coordinate with the Port to manage dredging and dredge spoils disposal under an existing applicable permit. Requirements would include development of a sampling plan, sediment characterization, a sediment removal plan, and handling and disposal in accordance with the applicable permit. Adherence to the new Corps or existing Port dredge material disposal permit would minimize the potential for emissions of hazardous materials due to the transport of dredge materials.

NEPA Determination. The impact on the public or the environment due to location of the project on a government list of hazardous materials sites would not be adverse.

CEQA Determination. The impact on the public or the environment due to location of the project on a government list of hazardous materials sites would be less than significant.

Impact 3.12-3: Emission of Hazardous Materials within ¼ Mile of a School

No Action Alternative

This alternative would not involve modification of the Ferry Terminal facilities. New and existing WETA services would be accommodated at the existing gates available to WETA at the Ferry Terminal (Gates B and E) without any changes or improvements. No changes to the emissions of hazardous materials at the Ferry Terminal gates would be expected under the No Action Alternative.

Action Alternative

A search of governmental databases and local maps indicates that there are 16 schools and educational facilities within ¼ mile of the proposed project. However, as discussed above in Impact 3.12-1,

adherence to San Francisco Health Code Articles 21 and 30, SFDPH requirements, and the Port Operations Plan, if required, would minimize the potential for emissions of hazardous materials due to the use and transport of diesel fuel required by the back-up generator. In addition, as discussed above in Impact 3.12-2, adherence to the new Corps or existing Port dredge material disposal permit would minimize the potential for emissions of hazardous materials due to the transport of dredge materials. Therefore, no adverse impact to schools would be expected.

NEPA Determination. The potential impact on the public within ¼ mile of a school due to the handling of hazardous materials associated with operation activities would not be adverse.

CEQA Determination. The potential impact on the public within ¼ mile of a school due to the handling of hazardous materials associated with operation activities would be less than significant.

Impact 3.12-4: Potential Impacts to Implementation of an Adopted Emergency Response Plan

No Action Alternative

Under the No Action Alternative, new and existing WETA services would be accommodated at the existing gates available to WETA at the Ferry Terminal (Gates B and E) without any changes or improvements. No changes to the implementation of an adopted emergency response plan would be expected under the No Action Alternative. This alternative would inhibit WETA's ability to meet their emergency operation and evacuation responsibilities during a major catastrophic event, because only two gates would be available for vessel evacuation. As a result, the No Action Alternative would result in adverse and potentially significant impacts to emergency operation.

Action Alternative

The proposed project would not be expected to impair implementation of, or interfere with, any emergency operation or evacuation plans in the vicinity of the project site. Existing vehicular access for the fire lane would be maintained. Additionally, BART's evacuation route on the Ferry Plaza would be maintained and would not be impacted. Implementation of the proposed project would improve WETA's ability to respond to emergencies by increasing the Ferry Terminal's capacity for implementing a major evacuation. The project would construct all new facilities to California Building Code Essential Facilities standards, which would help ensure that the project facilities would remain operational in the event of extreme environmental events. The Action Alternative would have a beneficial impact on emergency operation.

NEPA Determination. The project would have a beneficial impact on emergency operation.

CEQA Determination. The impact to emergency response plans during operation would be less than significant.

Indirect Impacts

No indirect impacts from hazards and hazardous materials for the Action or No Action Alternatives have been identified.

Construction Impacts

Impacts to water quality related to construction activities (i.e., dredging and pile driving) are discussed in Section 3.11, Water Resources.

Impacts on schools and emergency response from project construction would be similar to those described under Direct Impacts above. Adherence during construction to San Francisco Health Code Articles 21 and 30, SFDPH requirements, and the required Port Operations Plan would minimize the potential for emissions of hazardous materials; therefore, no adverse impact to schools would be expected. Additionally, construction activities would not be expected to impair implementation of, or interfere with, any emergency operation or evacuation plans in the vicinity of the project site.

The No Action Alternative would not result in any physical changes to the Ferry Terminal, and no construction activities would be required. Therefore, there would be no construction impacts to hazards and hazardous materials.

Impact 3.12-5: Upset and Accidents Involving Hazardous Materials Use and Storage During Construction Activities

This project would include demolition, removal, repair, and replacement of existing facilities, as well as construction of new facilities. Portions of the existing deck and pile structures in the South Basin would be removed. Three new gates (Gates A, F, and G) and new circulation areas would be constructed. Most of the demolition and construction areas would be accessed from barges in the construction zone on San Francisco Bay, identified on Figure 2-9. Construction and demolition activities would include the use of a variety of types of diesel-powered equipment, including barges, tugboats, cranes, clamshell dredges, and excavators. Impacts related to hazardous materials use, storage, and disposal during construction could potentially create a hazard to the public or the environment.

Hazardous materials (e.g., diesel fuel, hydraulic oil, lubricants, paints, or other hazardous materials) would be transported and used on site for proposed construction activities. In addition, construction vehicles and equipment would be used on site that could accidentally release hazardous materials, such as oils, grease, or fuels. Demolition activities would require the removal and potential temporary storage of piles that have been treated with creosote, or that contain other potentially hazardous substances. Accidental releases of hazardous materials could result in adverse health effects to construction workers, the public, and the environment. This potential impact would be considered adverse. Mitigation Measure HAZ-1, Prepare a Hazardous Materials Management Plan (HMMP), requires WETA to prepare a HMMP to address potential spills or exposures to contaminants during project construction, including measures for appropriate material storage; spill control, containment, and cleanup; emergency preparedness; and worker training.

NEPA Determination. The public or the environment could be adversely impacted as a result of hazardous materials use and storage associated with construction activities. Implementation of Mitigation Measure HAZ-1, Prepare a Hazardous Materials Management Plan, would reduce this impact; therefore, impacts would not be adverse.

CEQA Determination. The impact on the public or the environment as a result of hazardous materials use and storage associated with construction activities is considered potentially significant. Implementation of Mitigation Measure HAZ-1, Prepare a Hazardous Materials Management Plan, would reduce this impact to a less-than-significant level.

Impact 3.12-6: Demolition, Transport, and Disposal of Structures and Dredge Material Containing Hazardous Materials

Structures constructed prior to 1981 may contain asbestos, and structures painted prior to 1978 may have lead paint. Based on the age of some of the deck and pile structures to be demolished or repaired, asbestos and lead could be present on site. If this material is present and not properly abated prior to demolition, it could potentially expose the public and the environment to these contaminants. Wood treated with preservation chemicals and removed from service, such as creosote-covered pilings, contains

hazardous chemicals that pose a risk to human health and the environment. Impacts to human health or the environment related to demolition, transport, and disposal of these hazardous wastes during construction could occur. This impact would be considered adverse. Mitigation Measure HAZ-1, Prepare a Hazardous Materials Management Plan, would require WETA to prepare an HMMP to address potential exposure to contaminants during project demolition and construction, including measures for appropriate material containment, cleanup, emergency preparedness, and worker training.

Dredge spoils may be impacted with PAHs, as described in Section 3.12.2. As discussed above in Impact 3.12-2, adherence to the new Corps or existing Port dredge material disposal permit would minimize the potential for emissions of hazardous materials due to the transport of dredge materials. Impacts to human health or the environment related to dredging would not be adverse and would be less than significant.

NEPA Determination. The public or the environment could be adversely impacted as a result of demolition, transport, and disposal of structures containing hazardous materials during construction activities. Implementation of Mitigation Measure HAZ-1, Prepare a Hazardous Material Management Plan, would reduce this impact; therefore, impacts would not be adverse.

CEQA Determination. The impact on the public or the environment as a result of demolition, transport, and disposal of structures containing hazardous materials during construction activities is considered potentially significant. Implementation of Mitigation Measure HAZ-1, Prepare a Hazardous Material Management Plan, would reduce this impact to a less-than-significant level.

Cumulative Impacts

Impact 3.12-7: Potential to Result in Cumulative Impacts from Hazards and Hazardous Materials

The geographic area of cumulative impacts to potential hazardous materials is central San Francisco Bay and the northeastern waterfront area. The proposed project's construction activities have the potential to expose the public, construction workers, and/or the environment to hazardous materials. Project construction activities would require the use, transport, and disposal of a hazardous materials (such as diesel fuel and lubricants for construction equipment) and wastes (such as dredging spoils and demolition waste). The reasonably foreseeable projects in the vicinity of the site that are listed in Table 3-1 may also result in similar releases or risks. However, the implementation of standard construction practices, and compliance with necessary regulatory requirements (e.g., dredging permits, building permits, California Highway Patrol requirements) would reduce the risk for exposure and, if a hazardous materials release occurred during construction, would ensure that the issue would be abated and would not combine to create a cumulative construction impact. Therefore, there would be no cumulative adverse impacts from construction activities.

Operation of the proposed project would require the routine use and transport of some hazardous materials. Although the quantity and frequency would be minor, the use of diesel fuel for the emergency generator and the disposal of dredge spoils from maintenance dredging have the potential to expose the public and/or the environment to hazardous materials. The reasonably foreseeable projects in the vicinity of the site that are listed in Table 3-1 may also require the ongoing use and transport of hazardous materials that could pose a risk to the public. Each project would be subject to CEQA, and would be required to consider best management practices and mitigation measures that would reduce potential impacts to a less-than-significant level, such as those that would apply to the proposed project. In addition, each project would be subject to the requirements of dredging permits, building permits, and California Highway Patrol requirements. In addition, each project would be subject to the CCSF's hazardous materials handling requirements, specified in Article 21 of the San Francisco Health Code, which requires the preparation of a Hazardous Materials Plan. These regulatory requirements would

reduce the risk that the public or the environment would be exposed to hazardous materials or wastes from ongoing project operations. Therefore, no cumulative adverse impacts from hazards and hazardous materials would be anticipated.

NEPA Determination. The project would not contribute to cumulative adverse hazards or hazardous materials impacts.

CEQA Determination. The project would not contribute to cumulative adverse hazards or hazardous materials impacts, and would therefore be less than significant.

3.12.4 Mitigation Measures

Mitigation Measure HAZ-1: Prepare a Hazardous Materials Management Plan

WETA will prepare an HMMP for review and approval by the Port prior to moving equipment to the project site for construction and demolition activities. The requirements of the HMMP for the project will govern the onsite management of hazardous materials, including spill prevention;, and the offsite disposal of hazardous wastes. The HMMP, at a minimum, will include the following requirements:

- **Hazardous Materials Storage and Disposal.** The construction contractor will be responsible for the proper storage and disposal of any hazardous materials or wastes in accordance with all federal, state, and local laws and regulations. This may involve obtaining permits from the local regulatory agency for the storage of hazardous materials, and obtaining a Waste Generators Identification Number from the state for disposal of any hazardous wastes generated at the site. The HMMP shall include requirements for appropriate material storage; spill control, containment, and cleanup; vehicle and construction equipment inspections; emergency preparedness; and worker training.

- **Lead and Asbestos Management.** Prior to any demolition activities, a lead-based paint and asbestos survey of the structures shall be conducted. Based on the results of the survey, it will be determined if any lead-based paint or asbestos is present that requires abatement prior to demolition of the structures. Results of this survey shall be included in the HMMP. Any abatement required shall be completed in accordance with all federal, state, and local regulatory requirements by properly licensed abatement contractors, before demolition of the structures.

- **Wood Waste Management.** Procedures for implementation of DTSC's Alternative Management Standards for Treated Wood Waste will be included in the HMMP, including employee training in waste management, segregation of the wood waste from other wastes, appropriate storage and labeling, and transportation to an authorized treated wood waste facility.

- **Universal Waste Management.** A survey of common items that are regulated as "universal wastes" by the State of California (e.g., fluorescent lighting tubes and ballasts, and mercury thermometers) shall also be conducted. Provisions for abatement and removal of these materials prior to demolition in accordance with Cal/OSHA regulations shall be addressed in the HMMP.

- **Reporting.** The findings of the hazardous materials abatement activities shall be documented by a qualified environmental professional, and submitted to the Port and the SFDPH prior to the issuance of construction and demolition permits.

3.13 GEOLOGY, SOILS, AND SEISMICITY

3.13.1 Introduction to the Analysis

This analysis evaluates the proposed project's potential effects related to geology, soils, and seismicity. Potential seismic impacts are assessed with respect to exposure of people or structures to geologic hazards, including fault rupture, seismic shaking, liquefaction, and other earthquake-related ground failures, and earthquake-induced landslides. In addition, the impact analysis assesses potential impacts related to unstable geologic units, as well as soil erosion and loss of topsoil. Overall, compliance with the Port of San Francisco (Port) building requirements and California Building Code (CBC), as well as with project-specific plans prepared for the Downtown San Francisco Ferry Terminal Expansion Project (project), would ensure that all impacts related to geology and soils would not be adverse, as discussed below.

3.13.2 Affected Environment

This section addresses the geologic environment and the potential geologic and seismic hazard impacts related to the proposed project. It includes the baseline geologic, geomorphic, and seismic conditions for the Bay Area. Potential geologic and seismic hazards are also discussed, because they might pertain to implementation of the proposed project.

Geological Setting

Study Area

The study area for geology and seismic hazards for the proposed project is the geologic and tectonic setting of the Bay Area. The study area is a broad geographic area, because of the potential for regional geologic features to affect the proposed project. From the edge of the continental shelf near the Farallon Islands, it extends inland to the western margin of the Sacramento-San Joaquin Valley; and from the southern end of the Santa Clara Valley, it extends northward to the northern end of the Sonoma Valley. This region incorporates all the major tectonic elements that define the structure and geologic characteristics of or affecting the Bay Area.

The project area is defined as the area between Pier 1 on the north and Pier 14 on the south, including the San Francisco Ferry Building (Ferry Building), the Agriculture Building, and existing water transit gates. The landward limit of the project area approximately corresponds to the eastern edge of The Embarcadero.

Regional Geological Setting

The Bay Area has a structurally controlled topography that consists primarily of north- to northwest-trending mountain ranges and intervening valleys that are characteristic of the Coast Ranges geomorphic province. This fabric is subparallel to the San Andreas Fault. The Coast Ranges consist of the Mendocino Range to the north of San Francisco Bay, the Santa Cruz Mountains west and south of San Francisco Bay, and the Diablo Range to the east of San Francisco Bay. The Coast Ranges are composed of a thick sequence of late Mesozoic (200 to 70 million years old) and Cenozoic (less than 70 million years old) sedimentary strata. The northern part of the Coast Range is dominated by the landslide-prone Franciscan assemblage.

San Francisco Bay is a topographic trough formed by a combination of warping and faulting, and is underlain by a down-dropped or tilted block (the Bay Block) (Olson and Zoback, 1998). This trough in the Coast Ranges allows the San Joaquin and Sacramento Rivers to drain to the ocean. San Francisco Bay is about 55 miles long, and from 3 to 5 miles wide. Constrictions divide San Francisco Bay into

Suisun, San Pablo, and the North and South San Francisco bays. San Francisco Bay is relatively shallow, with depths of less than about 10 feet, except in locations of drowned drainage channels. The deepest point is in the main channel through the Golden Gate, at a depth of approximately 350 feet below sea level.

The geology of the Bay Area is made up primarily of three different geologic provinces: the Salinian block, the Franciscan complex, and the Great Valley sequence. The Salinian block is west of the San Andreas Fault. It is composed primarily of granitic plutonic rocks, which are similar to those found in the Sierra Nevada, and are believed to be rocks of the Sierra Nevada Batholith that have been displaced along the San Andreas Fault. To the east of the San Andreas Fault, and bounded on the east by the Hayward Fault, is the Mesozoic Franciscan complex. The Franciscan rocks represent pieces of former oceanic crust that have accreted to North America by subduction and collision. These rocks are primarily deep marine sandstone and shale. However, chert and limestone are also found within the assemblage. Some of the rocks of the Franciscan complex (dominantly sheared shale of the mélange unit) are prone to landslides. To the east of the Hayward Fault is the Great Valley sequence. This is composed primarily of Cretaceous and Tertiary marine sedimentary rocks in the Bay Area. Some of these rocks (dominantly claystones) are also prone to landsliding. Figure 3.13-1 illustrates regional geology.

Recent Geologic History

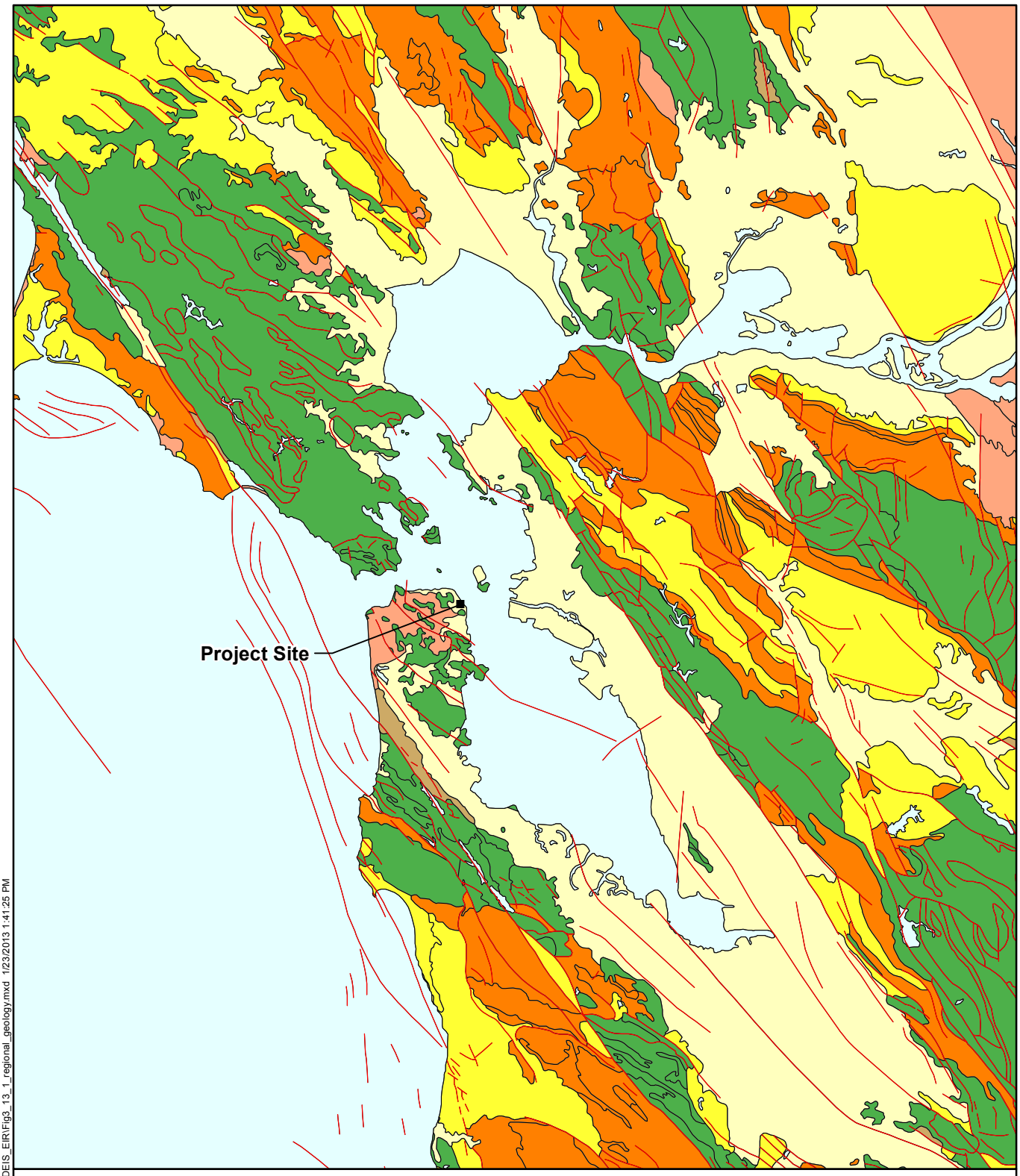
San Francisco Bay is California's largest estuarine environment, and its configuration—and the surrounding landscape—has been shaped by a combination of tectonic activity, recent sea level changes, and human activities since 1850. Since the formation of the Sacramento-San Joaquin drainage outlet through San Francisco Bay, approximately 400,000 years ago, the deposition has fluctuated between estuarine (periods of high sea level) and alluvial (periods of low sea level) (Sloan, 1992).

The present San Francisco Bay estuary formed less than 10,000 years ago as the global climate warmed and sea levels rose. Marine water re-entered San Francisco Bay approximately 10,000 years ago, and by about 4,000 years ago had reached its present level. With the establishment of estuarine conditions, sedimentation in San Francisco Bay changed from alluvial sands and silts to dark-colored estuarine clays and silts, commonly called Bay Mud. Deposition of sandier sediment was confined to channels.

Since approximately 1850, human activities have made significant modifications to San Francisco Bay, causing changes in the patterns of circulation and sedimentation. Between 1856 and 1900, hydraulic mining in the Sierra foothills deposited several feet of sediment throughout San Francisco Bay. Starting in the 1800s, the construction of levees and dikes altered the patterns of drainage and annual flooding in the Sacramento River Delta. Also, the placement of fill at numerous localities around the San Francisco Bay margins has dramatically altered the shoreline profile during historic time (WETA, 2003a).

Site Geology and Soils

The project area has been developed over the years by artificial filling of the waterfront and the construction of various seawalls to enable construction of piers, buildings, and roadways. Numerous geotechnical borings have been drilled and sampled to evaluate subsurface conditions at the locations of the Ferry Building, the San Francisco Municipal Railway Metro Turnaround, piers, and potential commercial buildings. The landward portion of the project area aligns with the seawall. The offshore portion of the site is underlain by relatively soft recent deposits (Younger Bay Mud) on the order of 100 feet thick, overlying a thin accumulation of Bay sediments and Old Bay Clay at an approximate thickness of 60 feet. Bedrock of the Franciscan Assemblage is at a depth of approximately 250 feet below the mudline (the bottom of San Francisco Bay).



REGIONAL GEOLOGY

Downtown San Francisco
Ferry Terminal Expansion Project
San Francisco, California

28067812

FIGURE 3.13-1

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Source: United States Gelological Survey, California Geological Survey, 2000.

Seismicity

The study area lies within the right-lateral San Andreas Fault system, which accommodates the majority of the plate motion between the Pacific and North American plates. Compressional tectonics reflected in the Coast Ranges also result in folds and thrusts sub-parallel to the San Andreas Fault system, and local bends in the fault may also produce secondary zones of deformation. Faults of the San Andreas system form the major structural features in the study area.

Significant Faults

Active faults in the study area are shown on Figure 3.13-2 as named structures; other faults are also shown without names. The project area is approximately equidistant (about 9.5 miles) from the San Andreas and Hayward Faults, to the southwest and northeast, respectively. The San Andreas Fault is approximately 9.5 miles to the southwest of the site. Both the San Andreas and Hayward Faults have generated major historical earthquakes, and are considered to have a moderate to high probability of producing another major earthquake within the next 30 years.

The most significant Quaternary faults in the vicinity of the study area are shown on Figure 3.13-2. Maximum earthquake magnitude estimates provided are based on those reported by the Working Group on California Earthquake Probabilities (WGCEP) (WGCEP, 1999). Fault data were obtained from Bortugno et al. (Bortugno et al., 1991), and the WGCEP (WGCEP, 1999). The following paragraphs briefly describe each of the major faults, from west to east (Figure 13.3-2).

San Gregorio Fault

The San Gregorio Fault is a major Holocene active fault that lies west of the San Andreas Fault. The fault is approximately 78 miles long, extending from the Big Sur area northward to the area offshore of Bolinas Bay. Most of the fault lies offshore; however, in several areas the fault lies onshore and has been actively investigated (Simpson et al., 1992). The fault has an estimated Quaternary slip rate of 0.2 inch/year. Estimates of earthquake recurrence intervals on the fault range from 350 to 680 years, based on offset archeological remains at Seal Cove (Simpson et al., 1992). The San Gregorio Fault is approximately 35 miles from the project area, and the maximum earthquake magnitude for the fault is estimated to be approximately Moment Magnitude (Mw)[1] 7.3.

San Andreas Fault

The San Andreas Fault is the largest active fault in California, and extends from the Gulf of California on the south approximately 750 miles to Cape Mendocino on the north. It was the source of the 1906 Mw 7.9 San Francisco earthquake (Wallace, 1990), which ruptured approximately 280 miles of the fault from San Juan Batista to Shelter Cove. The fault is about 9.5 miles southwest of the project area at its closest approach.

The San Andreas Fault can be divided into a number of segments, based on differences in geomorphology, geometry, paleoseismic chronology, seismicity, and historic displacements. In the Bay Area, these segments include the southern Santa Cruz Mountains, possible source of the 1989 Mw 7.0 Loma Prieta earthquake; the Peninsula segment; and the North Coast segment. These segments have been assigned maximum earthquakes of Mw 7, Mw 7.1, and Mw 7.9, respectively, by the WGCEP (WGCEP, 1999).

[1] Mw is a measure of the amount of energy released by the earthquake.

Hayward Fault

The Hayward Fault is about 62 miles long and has been divided into two fault segments: a longer southern segment, and a shorter northern segment. The fault demonstrates systematic right-lateral creep along its entire length (Lienkaemper et al., 1991). This structure is considered to be the most likely source of the next major earthquake in the Bay Area (WGCEP, 1999), and is approximately 9.5 miles northeast of the project area. The Local Magnitude (M_L)[2] 6.8 event in October 1868 was the last major earthquake on the Hayward Fault, and occurred along the southern segment near Fremont. The WGCEP has assigned maximum earthquakes of M_W 6.9 for both the northern and southern segments of the Hayward Fault (WGCEP, 1999).

Rodgers Creek Fault

The Rodgers Creek Fault is a 38-mile-long northwest-striking, right-lateral strike-slip fault that extends northward from the projection of the Hayward Fault on the southern side of San Pablo Bay.

The Rodgers Creek Fault has a long-term geological slip rate similar to the Hayward Fault, and produced a large-magnitude historical earthquake in the late 1800s. Investigations by Schwartz, et al., identified evidence for three earthquakes in the last 925 to 1,000 years, yielding an earthquake recurrence interval of 230 years for an earthquake of M_W 7.0 (Schwartz et al., 1992). The fault is about 25 miles to the north of the project area at its closest approach.

Concord-Green Valley Fault Zone

The Concord-Green Valley Fault is a northwest-striking, right-lateral strike-slip fault zone that extends from the Walnut Creek area across Suisun Bay and continues to the north. The Concord Fault extends for approximately 12 miles, from the northern slopes of Mount Diablo to Suisun Bay; and the Green Valley Fault continues to the north for about 28 miles. The Concord Fault is an actively creeping structure that has a long-term creep rate of approximately 0.2 inch/year. It is estimated that rupture of both faults would produce a maximum earthquake of about M_W 6.9, with a recurrence interval of approximately 180 years (WGCEP, 1999). At its closest point, the Concord Fault is approximately 22 miles from the site.

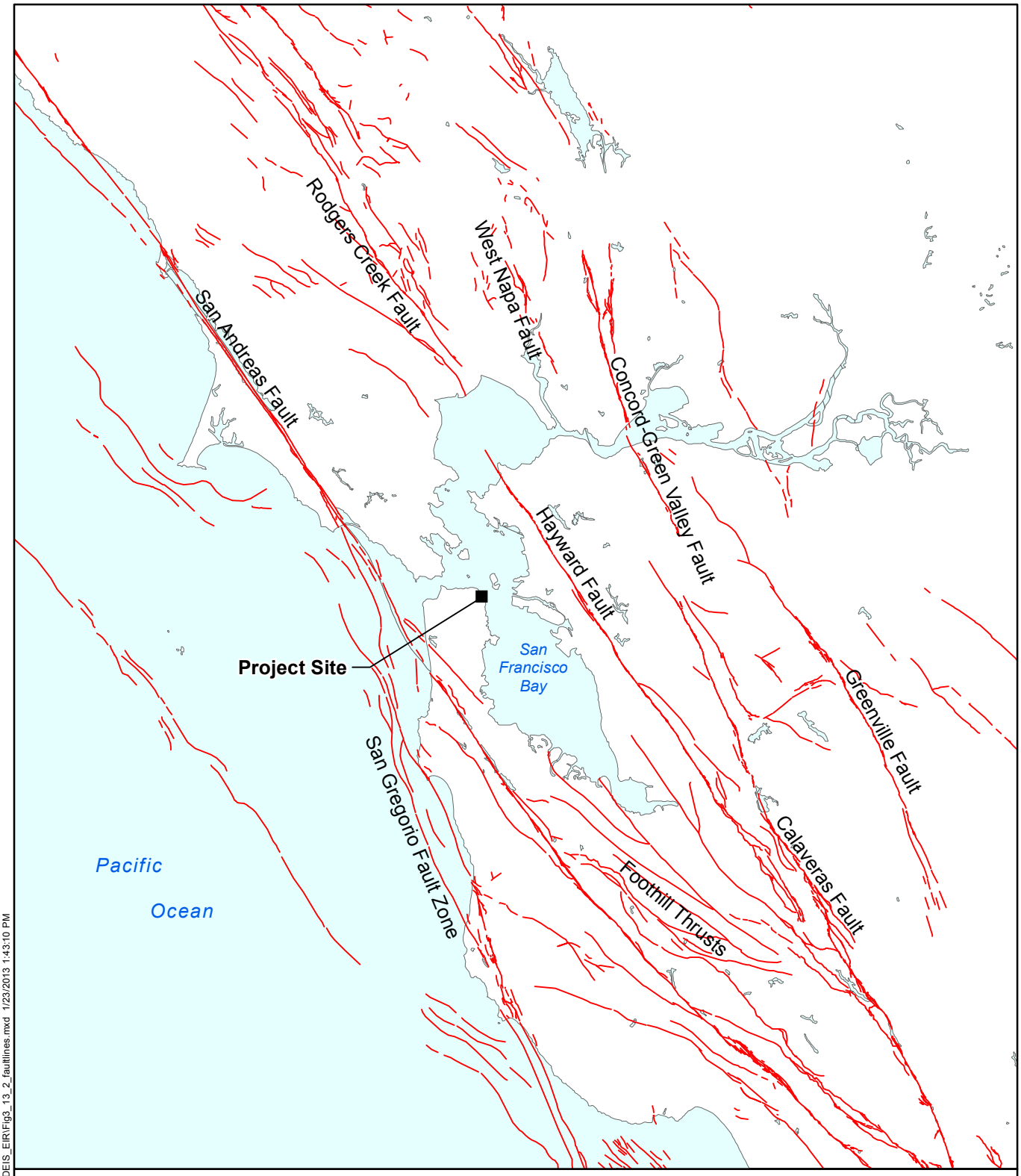
Fault Rupture

Other active faults—the West Napa, Foothill, Greenville, and Calaveras—are shown on Figure 3.13-2, but are sufficiently far from the project area that they are not discussed in this text. The closest faults to the project area zoned under the Alquist-Priolo Special Studies Zone Act are the San Andreas Fault and the Hayward Fault, approximately 9.5 miles from the project area. The Act requires the California Geological Survey to designate faults considered active or potentially active, and to establish zones within which studies are required for structures involving human occupancy. Based on the absence of zoned faults, the hazard from ground rupture is considered very low to negligible.

Seismic Shaking

Seismically induced strong ground shaking is potentially a significant geologic hazard expected in the project area. Both the San Andreas and Hayward faults have generated major historical earthquakes and are considered to have a moderate probability of producing another major earthquake within the next 30 years. The project area has experienced strong ground motions in the past, and will do so in the future. The highest peak acceleration is expected to occur from a M_W 7.9 maximum credible earthquake event on the San Andreas Fault at a distance of approximately 9.5 miles from the project area. Strong ground shaking could either be amplified or dampened, depending on the engineering properties of the soils.

[2] M_L is based on the measurement of the earthquake from a distance of 100 kilometers from the epicenter.



MAJOR ACTIVE FAULTS

Downtown San Francisco
Ferry Terminal Expansion Project
28067812 San Francisco, California

FIGURE 3.13-2

Source: California Geological Survey, 2000.

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Liquefaction and Lateral Spreading

Liquefaction of soils occurs when loose, cohesionless soils become saturated, temporarily losing shear strength during strong ground shaking. Significant factors that affect soil liquefaction potential are grain-size distribution, relative density, degree of saturation, the initial stresses acting on the soils, and the characteristics of the earthquake (such as the intensity and duration of the ground shaking). The project area is potentially prone to liquefaction (State of California, 2003).

In addition to liquefaction, other potential hazards in the project area include compaction consolidation (settlement) and seismically induced settlement. Dissipation of excess pore pressure generated by ground shaking could produce volume changes within the liquefied soil layers, which would be manifested at the ground surface as settlement.

Subsidence

Subsidence of the land surface can occur from tectonic deformation, consolidation, hydrocompaction, collapse of underground cavities, oxidation of organic-rich soils, rapid sedimentation, and activities of man, such as the withdrawal of groundwater. Around the margins of San Francisco Bay, settlement commonly occurs in areas of manmade fill underlain by Young Bay Mud through consolidation of the Bay Mud, and consequent subsidence of the overlying materials. Areas that are underlain by bedrock and dense fill have a low susceptibility to subsidence. Areas underlain by Bay Mud, estuarine sediments, organic rubbish, or thick organic deposits, such as the project area, may be moderately to highly susceptible to subsidence. Settlement is discussed in Liquefaction and Lateral Spreading, above.

Expansive Soils

No expansive soil underlies the project area. Therefore, the hazard from expansive soil is considered low.

Geologic Resources

The following sections discuss geologic resources in the vicinity of the study area.

Sand and Gravel Aggregate Resources

In 1987, the California Division of Mines and Geology published a comprehensive mineral land classification for aggregate materials in the San Francisco-Monterey Bay Area (Stinson et al., 1987). Lands were classified in the following categories:

- **MRZ-1:** Areas where adequate information indicates that no significant mineral deposits are present, or where it is judged that little likelihood exists for their presence.
- **MRZ-2:** Areas where adequate information indicates that significant mineral deposits are present, or where it is judged that a high likelihood for their presence exists.
- **MRZ-3:** Areas containing mineral deposits the significance of which cannot be evaluated from available data.

According to these definitions, the project area is classified as MRZ-1.

Oil and Gas Resources

No oil and gas reserves have been identified or are under production in the study area.

Regulatory Setting

Regulatory requirements potentially applicable to geology and geologic hazards are summarized below.

Federal

There are no applicable federal regulations.

State

2001 California Building Code

The CBC contains the minimum standards for design and construction in California. Local standards other than the CBC may be adopted if those standards are stricter. The CBC involves the standards associated with seismic engineering detailed in the Uniform Building Code of 1997.

California Public Resources Code Section 25523(a); 20 California Code of Regulations 1752(b) and (c); 1972 Alquist-Priolo Earthquake Fault Zoning Act (amended 1994)

The Alquist-Priolo Earthquake Fault Zoning Act was passed in 1972 to mitigate the hazard of surface faulting to structures for human occupancy. Because of the project area's location outside of mapped Alquist-Priolo zones, further study would not be required.

California Public Resources Code Chapter 7.8, 1990 Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act of 1990 allows the lead agency to withhold permits until geologic investigations are conducted, and mitigation measures are incorporated into plans. The Seismic Hazards Mapping Act addresses not only seismically induced hazards, but also expansive soils, settlement, and slope stability.

Port of San Francisco

The Port Planning and Development Division has regulatory review responsibilities to ensure that new construction, alterations, and public improvements comply with applicable use, design review, environmental, and other government regulations. The Port requires compliance with their building code, and is the permitting agency for construction and demolition on Port property.

3.13.3 Impact Evaluation

This section includes an analysis and determination of the potential adverse impacts of the proposed project on people or structures due the geological features of the project area.

The analysis considers whether the proposed project would:

- Expose people or structures to potential substantial adverse effects, including risk of loss, injury, or death, involving rupture of known earthquake fault; strong seismic ground shaking; seismic-related ground failure, including liquefaction; or landslides;
- Result in substantial soil erosion or the loss of topsoil;
- Be located on a geological unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in onsite or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse;

- Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (UBC, 1997), creating substantial risks to life or property.

Extensive existing information and studies are available for the project area, including site-specific data. These resources were used to identify the existing geologic and seismic setting for the project area, and to determine the susceptibility of the area to geologic hazards such as liquefaction.

The project area is not in an Alquist-Priolo Earthquake Fault Zone, and no active or potentially active faults exist within or in the immediate vicinity of the project area. No impact is expected. The proposed project area is over water; therefore, soil erosion or the loss of topsoil due to proposed structures would not occur. No significant mineral resources are within the project area; therefore, there would be no impact to mineral resources from implementation of the proposed project. Because there is no potential for project impacts related to faults; soil erosion and topsoil loss; or mineral resources, these areas are not discussed in detail in this section.

Impacts from tsunami and seiche are discussed in Section 3.11, Hydrology and Water Quality.

Direct Impacts

Impact 3.13-1: Increased Risks to People and Structures During a Seismic Event, Fault Rupture, or Seismic Shaking

No Action Alternative

Under the No Action Alternative, no modifications would be made to the existing Downtown San Francisco Ferry Terminal (Ferry Terminal) facilities to accommodate new or existing Water Emergency Transportation Authority (WETA) services. The Port is responsible for the maintenance and safety of the terminal facilities. The majority of the areas around the Ferry Building were not constructed to Essential Facility Standards; consequently, a seismic event could have the potential to result in risk to people and structures. Therefore, the No Action Alternative may result in adverse impacts with regard to increased risk to people or structures.

Action Alternative

The project area has been developed by artificial filling on the waterfront, and construction of various seawalls to enable construction of piers, buildings, and roadways. The project area is underlain by relatively soft recent deposits (Younger Bay Mud) on the order of 100 feet thick. Placement of new structures in the soft Bay Mud could possibly increase the impact of seismic shaking, liquefaction, and subsidence to people or structures in the project area. However, all of the proposed project structures would be pile-supported, with the piles driven through the mud layer to the sand layer beneath. Therefore, no adverse impact would be expected. Seismically induced strong ground shaking is potentially a significant geologic hazard in the project area. Strong ground shaking could either be amplified or dampened, depending on the engineering properties of the soils. Both the San Andreas and Hayward faults have generated major historical earthquakes, and are considered to have a moderate probability of producing another major earthquake within the next 30 years. The engineering properties of the soils affect the amplification or dampening of ground shaking during a seismic event. The risk to people and buildings would be reduced through the proposed project's compliance with applicable building codes and earthquake standards.

Soil liquefaction is affected by grain-size distribution, relative density, degree of saturation, the initial stresses acting on the soils, and the characteristics of the earthquake (e.g., the intensity and duration of ground shaking). The project area could be impacted due to liquefaction. However, the project would

follow all applicable regulatory standards, and therefore would not result in increased risk of liquefaction and lateral spreading.

As a part of final design and construction, a site-specific geotechnical investigation would be performed to inform the design and engineering required to comply with applicable building code standards. A geotechnical investigation would entail the drilling of soil borings to characterize soil properties, and to provide engineers with information necessary to determine construction measures that would minimize risk to structures and people due to seismic shaking, subsidence, and liquefaction. Therefore, no adverse impact would be expected.

National Environmental Policy Act (NEPA) Determination: The project would not have adverse impacts related to damage to structures and humans from seismic shaking, liquefaction, and subsidence.

California Environmental Quality Act (CEQA) Determination: The potential for damage to structures and humans from seismic shaking, liquefaction, and subsidence would be less than significant.

Impact 3.13-2: Potential Impacts to Sediment or Geology from Maintenance Dredging

No Action Alternative

Regular maintenance dredging is not currently required to maintain operations at existing Gates B and E. Because patterns of sediment accumulation in the Ferry Terminal area would be expected to be similar to historically observed patterns, regular maintenance dredging would not be anticipated for the No Action Alternative. Therefore, there would be no impact.

Action Alternative

For the Action Alternative, some dredging would likely be required on a regular maintenance cycle beneath the floats at the new Gates F and G, due to their proximity to the Pier 14 breakwater. It is expected that this minor maintenance dredging would be required at Gates F and G every 3 to 4 years, and would require removal of approximately 5,000 to 10,000 cubic yards (cy) of material. However, this amount of material removal would be negligible in the context of San Francisco Bay. In addition, as discussed in Section 3.11, Hydrology and Water Quality, the project would comply with the guidance and requirements of the Dredge Materials Management Office (DMMO), which would encourage beneficial reuse of dredged materials.

In 1994, the U.S. Environmental Protection Agency designated the "Deep Ocean Disposal Site," which is 50 miles outside of the Golden Gate. The U.S. Environmental Protection Agency manages the site, and has set a yearly capacity of 4.8 million cy of dredged material (BCDC, 2008). There are also four disposal sites in the San Francisco Bay Estuary, including the Suisun Bay Channel, Alcatraz Island, San Pablo Bay, and Carquinez Strait. The volume of dredged material that would require disposal would be negligible compared to the total yearly capacity of these disposal sites (i.e., 10,000 cy, compared to more than 7 million cy, or approximately 0.1 percent).

NEPA Determination. The project would not have adverse impacts on geology and soils as a result of maintenance dredging.

CEQA Determination. The project's potential to impact to geology and soils as a result of maintenance dredging would be less than significant.

Indirect Impacts

No project-related indirect impacts due to geology, soils, or seismicity have been identified.

Construction Impacts

The No Action Alternative would not result in any physical changes to the Ferry Terminal, and no construction activities would be required. Therefore, there would be no construction impacts to geology, soils, or seismicity.

Impact 3.13-3: Potential Impacts to Sediment or Geology from Construction Activities

The project improvements would be constructed on piles over San Francisco Bay, and would generally not affect sediment or geology. Project construction would require dredging and removal of up to 33,000 cy of material for the new Gates A, F, and G. However, this amount of material removal would be negligible in the context of San Francisco Bay. In addition—as discussed under Impact 3.13-2 and in Section 3.11, Hydrology and Water Quality—the project would comply with the guidance and requirements of the DMMO, which would encourage beneficial reuse of dredged materials.

Project construction would also require pile driving. Vibration from pile driving is analyzed in detail in Section 3.7, Noise and Vibration. Vibration would be very unlikely to affect settlement of the existing buildings in the project area (e.g., the Ferry Building and the Agriculture Building), or the slope or stability of the Bay Mud at the project site. The piles that support the existing buildings are designed to withstand extreme loads, such as those generated by storms and/or seismic events, and therefore would not be affected by temporary vibration occurring at some distance (more than 20 feet away).

Due to the regular matrix of piles under the existing building, the construction is also very unlikely to cause any movement of sediment under buildings. Large storms and tides regularly resuspend large sediment loads in San Francisco Bay. After large storms, suspended sediment tends to be deposited in relatively quiescent areas—for example, under pile-supported structures—leading to a build-up of sediment. Therefore, project construction would not adversely affect sediments, sediment stability, or geology in the project area.

NEPA Determination: The project's construction impacts on geology and sediments would not be adverse.

CEQA Determination: The project's construction impacts on geology and sediments would be less than significant.

Cumulative Impacts

Impact 3.13-4: Potential to Result in Cumulative Impacts to Geology, Soils, and Seismicity

The proposed project would improve the seismic safety of the facilities in the project area, and therefore would not contribute to cumulative impacts related to risks to people and structures during a seismic event. It would be expected that the development of the proposed project and other reasonably foreseeable projects would improve seismic preparedness along the waterfront, and no cumulative seismic impacts would be expected. The proposed project has the potential to affect sediments and geology from dredging (both during construction and maintenance dredging), and also from construction activities requiring pile driving. Other reasonably foreseeable projects listed in Table 3.1-1, such as the Port Maintenance Dredging Program, the Golden Gate Transit Ferry Terminal Improvements, and the Agriculture Building Rehabilitation and Seismic Upgrade, could also require dredging or installation, repair, or replacement of piles in the immediate vicinity of the proposed project. The cumulative effect of dredging activities in San Francisco Bay could impact sediment volume, and transport in San Francisco Bay. However, dredging activities for the project would be small and infrequent (33,000 cy of material during construction, and 5,000 to 10,000 cy of material every 3 or 4 years) in comparison to the ongoing

maintenance dredging programs in San Francisco Bay. In 2010, approximately 2,000,000 cy of material was dredged for maintenance dredging projects in San Francisco Bay (DMMO, 2011). In addition, the project would comply with the guidelines of the DMMO, which encourages beneficial reuse of dredged material. Therefore, there would be no adverse cumulative impacts to geology and sediments from dredging activities.

The project's potential effects on sediments and geology from construction activities such as pile driving would be minimal, localized, and unlikely to affect settlement of the existing buildings in the project area (e.g., the Ferry Building and the Agriculture Building), or the slope or stability of the Bay Mud at the project site. The Golden Gate Transit Ferry Terminal Improvements and the Agriculture Building Rehabilitation and Seismic Upgrade may also require pile driving, but it is not expected that construction activities for these projects would overlap. For the same reasons described for the proposed project, these projects would also be unlikely to affect settlement of stability of the geology, sediments and piles in the project area. Therefore, there would be no adverse cumulative impacts to geology and sediments from these activities.

NEPA Determination. The project would not contribute to cumulative impacts on geology, soils, and seismicity.

CEQA Determination. The project would not contribute to cumulative impacts on geology, soils, and seismicity, and would be less than significant.

3.13.4 Mitigation Measures

Mitigation measures would not be required for geological, soil, or seismic impacts.

3.14 ENERGY CONSUMPTION

3.14.1 Introduction to the Analysis

This section discusses the potential impacts on energy consumption of the Downtown San Francisco Ferry Terminal Expansion Project (proposed project) alternatives. For the purposes of this section, energy resources are described in terms of electricity and fuel. The analysis focused on the project's potential to increase demand on existing resources and the potential to result in a wasteful, inefficient, or unnecessary consumption of energy. The analysis has determined that no adverse impacts to energy consumption would occur as a result of the No Action and proposed project.

3.14.2 Affected Environment

This section provides an overview of existing energy service providers and energy consumption in the project area.

Existing Setting

Electric

The City and County of San Francisco (CCSF) receives most of its electricity from Pacific Gas and Electric (PG&E), which also provides natural gas and electricity to most of Northern California. However, the San Francisco Public Utilities Commission (SFPUC) provides electric power, generated by its hydroelectric facilities in the eastern part of California, to municipal facilities that include CCSF buildings, San Francisco Airport, and the Muni system. Power is also provided by SFPUC to the Port of San Francisco (Port) for its facilities along the waterfront. SFPUC power supplies approximately 17 percent of electric use in San Francisco (SFPUC, 2011a). The remaining 83 percent comes from PG&E and various energy service providers for nonmunicipal users (SFPUC, 2011a). Electricity is supplied to the project area by SFPUC, but the electricity is distributed within San Francisco on transmission lines owned and operated by PG&E.

The PG&E transmission lines are underground in the vicinity of the project area, accessed by a manholes and subsurface vaults. The nearest vaults are on the eastern side of The Embarcadero, in the street in front of the Downtown San Francisco Ferry Terminal (Ferry Terminal). No overhead transmission lines exist in the project area.

Total electricity use in San Francisco is currently approximately 6,000 gigawatt hours (GWh) per year, and is forecast to grow at a rate of 1.3 percent per year, reaching approximately 8,000 GWh per year by 2030 (SFPUC, 2011a). SFPUC currently generates approximately 1,600 GWh per year (SFPUC, 2011d).

Transportation Fuels

According to the State Alternative Fuels Plan (2007) prepared by the California Energy Commission (CEC) and the California Air Resources Board (CARB), California's transportation sector is more than 95 percent dependent on petroleum. More than 60 percent of the nation's petroleum consumption comes from foreign sources. California's transportation sector uses roughly half of the energy consumed in the state. In 2006, Californians consumed an estimated 20 billion gallons of gasoline and diesel fuel on the state's roadways, an increase of nearly 50 percent over the last 20 years (CEC, 2007).

Gas

PG&E provides natural gas to the project area and its vicinity. PG&E manhole and subsurface vaults are on the eastern side of The Embarcadero in the street, and in the area in front of the Ferry Terminal.

Regulatory Setting

Federal

The National Energy Conservation Policy Act identifies federal energy management goals and requirements. Signed into law in 1978, it has been updated and amended by subsequent laws and regulations, including the National Energy Policy Act of 2005, Executive Order 13423 (Strengthening Federal Environmental, Energy, and Transportation Management), and Executive Order 13514 (Federal Leadership in Environmental, Energy, and Economic Performance).

Energy consumption is addressed in the Council on Environmental Quality's regulations for implementing the National Environmental Policy Act (NEPA). Section 1502.16 (e) states that an EIS shall include "energy requirements and conservation potential of various alternatives and mitigation measures."

State

California Environmental Quality Act

At the state level, the California Environmental Quality Act (CEQA) (California Public Resources Code Sections 21000-21178) and the CEQA Guidelines (14 California Code of Regulations) require that the potential energy impacts of a proposed project be discussed and addressed, with particular emphasis on avoiding or reducing inefficient, wasteful, and unnecessary consumption of energy.

California Greenhouse Gas Bill (Assembly Bill 32)

The Global Warming Solutions Act was signed into law in 2006, it was intended to reduce production of greenhouse gases (GHGs) in California. Pursuant to Assembly Bill (AB) 32, CARB adopted a Scoping Plan in December 2008, outlining measures to meet the 2020 GHG reduction limits set by AB 32. To meet these goals, California must reduce its GHG emissions by 30 percent below projected 2020 business as usual emissions levels, or about 15 percent from today's levels (CARB, 2008).

State Alternative Fuels Plan (Assembly Bill 1007)

The State Alternative Fuels Plan was prepared by the CEC in partnership with the CARB to increase the use of alternative fuels in California.

Local

San Francisco Electricity Resource Plan

The Electricity Resource Plan for San Francisco was prepared by SFPUC and adopted by the Board of Supervisors in 2002. It is an action plan to meet the growth in demand for electricity by using reliable, affordable, and sustainable sources of electricity.

San Francisco General Plan

The San Francisco General Plan Environmental Protection Element includes the following objectives and policies related to energy consumption and efficiency:

Objective 12: Establish CCSF as a model for energy management.

Policy 14.1: Increase the energy efficiency of existing commercial and industrial buildings through cost-effective energy management measures.

Policy 14.5: Encourage use of integrated energy systems.

Objective 16: Promote the use of renewable energy sources.

Policy 17.1: Support continuation of state and federal tax incentives and credits for conservation and renewable energy technologies.

San Francisco Green Building Code

CCSF's Green Building Code is Chapter 13C of the San Francisco Building Code. The purpose of the Green Building Code is to promote the health, safety, and welfare of San Francisco residents, workers, and visitors by minimizing the use and waste of energy, water, and other resources in the construction and operation of the CCSF's building stock, and by providing a healthy indoor environment.

3.14.3 Impact Evaluation

This analysis considered whether the project would:

- Result in a wasteful, inefficient, or unnecessary consumption of energy; or
- Result in a significant demand on regional energy supply or requirement of substantial additional capacity.

The following methods of analysis were used to determine the project's effects on energy consumption and energy resources.

- The project description was reviewed to determine, quantitatively, the amount of energy that would be required during operation of the new project components (additional lighting and energy required for gate operation).
- Energy-saving measures incorporated into the project design were also considered.
- The analysis considered whether energy consumption would be significant in comparison with current energy use and energy availability in the project area.
- Measures to reduce energy use during operation were identified, if appropriate.
- Energy use during project construction was described qualitatively, and measures to reduce energy consumption during construction were identified, if appropriate.

The proposed project improvements would facilitate an increase in water transit services in San Francisco Bay. The Program Environmental Impact Report for WETA's Implementation and Operations Plan (WETA, 2003a) analyzed the impacts associated with the increase in service. Water transit would provide an alternative for daily commuters. This would reduce the number of daily vehicles on the road, thereby reducing transportation fuel consumption. Water transit as an alternative form of commuting would be consistent with the goals and objectives of the State Alternative Fuels Plan. The analysis below assesses the impacts associated with the facility improvement at the Ferry Terminal.

Direct Impacts

Impact 3.14-1: Wasteful, Inefficient, or Unnecessary Consumption of Energy during Project Operation

No Action Alternative

Under the No Action Alternative, no modifications would be made to the existing Ferry Terminal facilities to accommodate new or existing Water Emergency Transportation Authority (WETA) services.

An increase in fuel and electrical power consumption at the Ferry Terminal facilities would not occur. Therefore, the No Action Alternative would have no effect or impact with regard to the wasteful, inefficient, or unnecessary consumption of energy resources.

Action Alternative

The proposed project would require the installation of lighting for the gates and circulation areas. The total energy requirements for the additional lighting would be approximately 142,000 kilowatt hours (kWh) per year. To offset this demand, the proposed project could include photovoltaic cells in the weather protection canopies along the Gate A Access Pier, Gate B queuing area, and perpendicular to Gates E, F, and G. The energy generated from the photovoltaics would be expected to exceed the energy demand for the project lighting. Approximately 200,000 kWh could be generated on site. With the use of photovoltaic cells, the project would be a zero net energy project.

Should the final design not include the photovoltaic cells, the 142,000 kWh of energy would be provided by the SFPUC, which currently provides electricity to the project area. The energy required for lighting would be a small portion of the anticipated forecast for future energy consumption in San Francisco, and the amount of energy produced by the SFPUC (0.002 percent and 0.01 percent, respectively). Additionally, the project would be required to comply with CCSF's Green Building Standards. Such requirements include using fluorescent lighting fixtures with efficient lamps, or having exterior lights controlled by a photocell or automatic timer to prevent lights from operating during daylight hours. Additionally, outdoor lighting would be focused and directed, as possible, allowing for efficient lighting and more efficient usage of electricity. Therefore, it is anticipated that energy consumption from the use of lighting would not result in the wasteful, inefficient, or unnecessary consumption of energy resources.

Emergency power would be required on site; it would be provided by a centrally located generator serving the Port and WETA facilities. The exact size and location of the generator would be determined in consultation with the Port at a later date. The generators would only be used during emergencies, and would not result in a significant increase of fuel by the project.

Maintenance dredging would be infrequent as well as short in duration (on the order of a few weeks every 3 to 4 years), and therefore would not result in a significant increase of fuel use by the project.

NEPA Determination. The project would not result in adverse impacts due to wasteful, inefficient, or unnecessary consumption of energy.

CEQA Determination. The project's potential to result in wasteful, inefficient, or unnecessary consumption of energy would be less than significant.

Indirect Impacts

Impact 3.14-2: Significant Demand on Regional Energy Supply or Requirement of Substantial Additional Capacity

No Action Alternative

Under the No Action Alternative, no modifications would be made to existing Ferry Terminal facilities to accommodate new or existing WETA services. An increase in energy consumption would not occur. Therefore, the No Action Alternative would have no impact on regional energy supply, and would not require substantial additional capacity.

Action Alternative

The majority of energy consumed by the proposed project would be from nighttime lighting. The use of photovoltaic cells at Gates A, B, E, F, and G would generate more electricity than the project would require for lighting. The project also has energy-saving measures incorporated into its design, such as maximizing energy efficiency in the lighting plan—which is consistent with City of San Francisco's Electricity Resource Plan and General Plan. The proposed project would be a zero net energy project, should photovoltaic cells be included in the final design. Therefore, if photovoltaic cells are used, the Action Alternative would not require any additional energy supply.

As discussed above, should photovoltaic cells not be included in the final design, the amount of energy that would be required by the project would be a small portion of the anticipated future demand in San Francisco. The SFPUC, which provides the electricity for the project area, has sufficient supply to serve the project's energy needs, and the project would not increase regional demand or require additional electricity production.

NEPA Determination. The project would not have an adverse impact on regional energy supply, or require substantial additional capacity.

CEQA Determination. The proposed project would have a less-than-significant impact on regional energy supply, and would not require additional capacity.

Construction Impacts

The No Action Alternative would not result in any physical changes to the Ferry Terminal, and no construction activities would be required. Therefore, there would not be any adverse construction-related impacts on energy consumption.

Impact 3.14-3: Energy Consumption Increases Related to Project Construction

Under the proposed project, improvements to the North Basin could be constructed within 14 months, while construction of the South Basin could be completed within 2 years. Construction would include demolition; construction of piers and berthing structures; and circulation improvements. Because night work is not anticipated, minimal lighting, if any, would be required. Onsite power could be provided by the Port during construction. Generators for equipment operation could also be used; they would be located on the construction barges, and on the landside structural improvements when completed.

Common construction practices used for similar projects would be implemented. The use of equipment that would require significant amounts of fuel is not anticipated. All reasonable energy conservation practices would be used to minimize the costs associated with energy use, consistent with state and local requirements such as the San Francisco Green Building Ordinance. For example, measures that would be taken would reduce both air quality and energy/fuel impacts. Such measures, as contained in Mitigation Measure AQ-2, Implement Bay Area Air Quality Management District-recommended Best Management Practices, would include reducing the maximum idling time of diesel equipment to 2 minutes. Furthermore, under the San Francisco Green Building Ordinance, the proposed project is required to have construction and demolition debris transported by registered transporters, and taken to registered facilities that process and divert debris from landfills. Registered transporters that serve CCSF use trucks that run on alternative fuels (Recology, 2012).

NEPA Determination. The increase in electricity and fuel consumption during construction would not have adverse impacts to energy and fuel consumption.

CEQA Determination. The proposed project would result in a less-than-significant impact to energy consumption during construction activities.

Cumulative Impacts

Impact 3.14-4. Potential to Result in Cumulative Impacts on Energy Consumption

The geographical context of the cumulative energy impacts analysis is the city and county of San Francisco. The proposed project would require the use of fuel and energy for project construction. The reasonably foreseeable projects listed in Table 3.1-1 would also involve construction activities that would require the use of fuel, water, and energy during construction.

The proposed project, in combination with other projects within the area, could have the potential to result in cumulative energy impacts related to the wasteful use of fuel for construction activities. However, the projects would be required to comply with energy use consistent with federal, state, and local requirements, such as the methods established by the Bay Area Air Quality Management District. The federal, state, and local requirements and policies encourage sustainable construction practices related to energy efficiency and conservation; therefore, energy consumption would be expected to be reduced. For example, compliant with these policies, the proposed project would reduce idling time during construction, and implement other methods such as maintaining and properly tuning construction equipment in accordance with manufacturer's specifications, shutting equipment off when not in use, and the use of alternative fuels in transport vehicles. The other reasonably foreseeable projects would be expected to implement similar best management practices during construction. Therefore, there would be no cumulative adverse impacts from wasteful use of energy resources during construction.

If it incorporates photovoltaic cells at onsite facilities, the project would not contribute to future energy and fuel demand, and would not contribute to cumulative energy impacts. However, if photovoltaic cells were not used, additional energy would be required for project operations. The reasonably foreseeable projects listed in Table 3.1-1 would also result in an increase in energy demand in the study area that could be cumulatively adverse. However, the proposed project's energy consumption would be minor when compared to the future energy demand in San Francisco (e.g., 0.002 percent). The proposed project's operational energy demand, which would be required to support nighttime lighting of the facilities, would also be minor compared to some of the other reasonably foreseeable projects, such as the development of new residential or mixed use buildings, and developments such as the Cruise Terminal and Exploratorium. In addition, the proposed project would incorporate practices to further reduce energy consumption, such as using fluorescent lighting fixtures with efficient lamps, or having exterior lights directed or controlled by a photocell or automatic timer. Therefore, the proposed project's contribution to adverse cumulative energy impacts would not be considerable.

NEPA Determination. The project's contribution to cumulative energy consumption impacts would not be considerable.

CEQA Determination. The project's potential to result in cumulative energy and fuel impacts during construction and operation would be less than significant.

3.14.4 Mitigation Measures

Mitigation measures are not required for energy resources.

3.15 UTILITIES AND PUBLIC SERVICES

3.15.1 Introduction to the Analysis

This section discusses the potential impacts of the No Action Alternative and the proposed project on utilities and public services. The analysis focused on the project's potential to increase demand on utilities (water, wastewater, telecommunications, and solid waste) and public services (law enforcement, fire protection, and emergency service). The analysis has determined that the only potential adverse effect to utilities or public service would be the potential physical disruption to underground utilities in the project area from construction activities. This effect would be reduced through the implementation of mitigation, described in this section. The proposed project would not increase demand on utilities or public services. The proposed project would not induce a permanent increase in population that would impact schools or parks.

3.15.2 Affected Environment

This section provides an overview of existing utilities and public services in the Downtown San Francisco Ferry Terminal Expansion Project (project) area. The project area is shown on Figure 1-1. The utility and public service providers that serve the project area are also discussed.

Utilities discussed in this section include water, wastewater (sanitary and storm sewers), telecommunications, and solid waste. Public services discussed in this section include law enforcement, fire protection, and emergency medical services. Natural gas and electricity are discussed in Section 3.14, Energy Consumption.

The utilities in and/or serving the proposed project area are provided by the following service providers:

- Domestic Water – San Francisco Public Utilities Commission (SFPUC);
- Wastewater and Storm Drainage – City of San Francisco;
- Telecommunication – Landline: AT&T telephone services; Cell phone: multiple service providers); and
- Solid Waste (nonhazardous) – Recology.

Existing Setting – Utilities

Domestic Water

The SFPUC provides water services to approximately 2.5 million people in San Francisco, Santa Clara, Alameda, and San Mateo counties. Eighty-five percent of the water delivered to SFPUC customers comes from Sierra Nevada snowmelt, stored in the Hetch Hetchy Reservoir on the Tuolumne River in Yosemite National Park. The remaining water supply is generated from runoff in the Alameda and Peninsula watersheds, captured in reservoirs located in San Mateo and Alameda counties. Deliveries from the regional water system are limited to an average annual of 265 million gallons per day through 2018. The 2010 SFPUC Urban Water Management Plan assumed that the 265-million-gallon-per-day supply limitation would extend to 2035 (SFPUC, 2011b).

Water to the eastern side of the city distribution system, where the project would be located, is fed by two pipelines that terminate at University Mound Reservoir. Adjacent to the project area, water manholes connecting to the CCSF's water transmission system are located below the street in The Embarcadero, and in the ground along the Embarcadero Promenade.

Sanitary Sewer and Storm Drainage

The City of San Francisco manages a combined stormwater and sanitary sewer system that serves approximately 10 percent of the city, including the study area. This system includes large storage and transport boxes that temporarily retain combined stormwater and sewage flows that exceed the capacity of the wastewater treatment facilities. Along The Embarcadero in the vicinity of the project area, stormwater is collected via drains at the side of the road. Adjacent to the project area along The Embarcadero, there are approximately ten storm drains that flow to a storage and transport box below the street.

Wastewater from the project area (e.g., inside the San Francisco Ferry Building [Ferry Building] and the Agriculture Building) is collected and treated in the City's wastewater treatment facilities. The closest treatment facility is located approximately 2 miles from the project site, at the North Point Wet Weather facility along The Embarcadero. The existing wastewater facilities treat approximately 40 billion gallons per year of wastewater (SFPUC, 2010c). Stormwater runoff from most of the project area pier structures (e.g., existing gates, the Ferry Plaza, and circulation areas) drains directly into San Francisco Bay (ROMA, 2012).

Telecommunications

AT&T provides landline telecommunication services in the project area. Telecommunication wires are below ground on The Embarcadero.

There are 21 cell phone towers in San Francisco registered with the Federal Communications Commission. The closest tower (owned by Verizon Wireless) is approximately 1,500 feet west of the project area, at 222 Front Street (City Data, 2011). Verizon Wireless is just one of the several carriers providing communication services in the areas.

Solid Waste (Nonhazardous)

San Francisco diverts approximately 77 percent of its waste, the highest landfill-avoidance rate for any large city in the United States (NYT, 2010).

Recology provides recycling, compost, and landfill collection at commercial and residential locations in San Francisco, including the project area. Collection services are currently provided for the project area and the existing businesses in the project area (e.g., restaurants and retail businesses in the Ferry Building). Recology recycles the majority of material it hauls. Material is processed at the transfer station at 501 Tunnel Avenue, or at the Pier 96 sorting facility. The remaining materials not diverted as recycling or compost are sent to the Altamont Landfill in Alameda County (Recology, 2011). The Altamont Landfill, as of October 2011, has a remaining capacity of approximately 46 million cubic yards (74 percent of its permitted capacity) (CalRecycle, 2011). The landfill is projected to close in 2025 (CalRecycle, 2011). The Altamont Landfill would accept both project construction and operational waste. Operational uses may include trash generated by existing commuters, such as cups, paper products, and other miscellaneous objects.

See Section 3.12, Hazards and Hazardous Materials, for a discussion of the handling and disposal of potentially hazardous waste.

Existing Setting – Public Services

As discussed further in Section 3.2, Transportation and Circulation, emergency vehicle access at the project site is available along The Embarcadero curbside. There are two curb cuts and driveways south of the Ferry Building that provide emergency vehicle access to the eastern side of the Ferry Building and the

facilities located on the Ferry Plaza (Gates C and D, the Carnelian by the Bay, and Bay Area Rapid Transit [BART] facilities). The driveway just south of the Ferry Building also serves as a fire lane. Two additional curb cuts and emergency vehicle access points are north of the Ferry Building.

BART has evacuation facilities on the Ferry Plaza; in the case of an emergency in the Transbay Tube, passengers would be evacuated to the Ferry Plaza.

Law Enforcement Services

San Francisco Police Department

The San Francisco Police Department (SFPD) provides law enforcement services in the City and County of San Francisco (CCSF). Patrol functions are performed by the police officers of the Field Operations Bureau from ten district stations. The project is in the Southern District, supported by the Southern Station at 850 Bryant Street near Seventh Street (approximately 2 miles away). Immediately to the north and west is the Central District area, supported by the Central Station at 766 Vallejo Street near Powell Street (approximately 1 mile away). The next closest station is in the Tenderloin District at 301 Eddy Street (approximately 2 miles away).

The Port of San Francisco (Port) employs one police officer based at Pier 26. The officer responds to complaints and actively patrols Port property from Aquatic Park to the north and Pier 90 to the south, from 7:00 AM to 4:00 PM, Monday through Friday. SFPD provides backup to the Port's officer and law enforcement services after 4:00 PM and on weekends.

San Francisco Sheriff's Department

The San Francisco Sheriff's Department (SFSD) manages the six San Francisco County jails, makes arrests on warrants, transports fugitives, and provides security to the civil and criminal courts and City Hall. There are approximately 850 sworn and 100 civilian members. In addition, the SFSD augments law enforcement at the request of the SFPD. The SFSD works with SFPD and the State Department of Corrections when arresting state parolees, and works with SFPD during natural disasters and civic emergencies.

Fire Protection Services

U.S. Coast Guard

Per the U.S. Coast Guard's (USCG) Sector San Francisco Marine Firefighting Contingency Plan (USCG, 2008), the USCG's Captain of the Port (COTP) for the San Francisco sector works with Port authorities and local governments in their area of jurisdiction to maintain current and effective contingency plans. The COTP is supported in the maintenance of these plans by the San Francisco law enforcement and safety/emergency agencies to ensure coordination of federal, state, municipal, and commercial resources that respond to fires and other incidents. For this reason, firefighting is considered a state and local function.

However, the responsibilities of the COTP during a major fire aboard a vessel or waterfront facility include:

- Establishing and coordinating a Unified Command in accordance with the USCG Incident Management Handbook;
- Assuming Incident Commander for a burning vessel underway or at anchor when the fire department with jurisdiction is either not on scene or unable to respond, or no fire department has jurisdiction;
- Assuming operational control of all USCG forces on scene;

- Establishing safety or security zones, as necessary;
- Providing information on involved waterfront facilities;
- Providing information on the location of hazardous materials on the vessel or at the facility, if available;
- Providing technical data on ship construction, stability, and marine firefighting techniques;
- Coordinating the response to actual or potential oil or hazardous materials discharges;
- Obtaining tugs to assist in relocating moored or anchored vessels;
- Alerting owners/operators of terminals or vessels at risk;
- Providing portable communications equipment to response personnel, as needed; and
- Assisting in staffing the incident command post.

San Francisco Fire Department

The San Francisco Fire Department (SFFD) provides fire protection and emergency medical services for approximately 1.5 million people, including the residents, visitors, and workers of CCSF. This includes property under the jurisdiction of the Port, including the project area.

The Port Fire Marshal is the SFFD's liaison to the Port. The Fire Marshal conducts construction and referral inspections, plan review, and pier surveys; and issues permits along the Port's waterfront jurisdiction.

The following SFFD stations would provide the first response for fire suppression, rescue, and emergency medical service in the project area:

- Station 1 at 676 Howard Street at Third Street (approximately 1 mile away);
- Station 2 at 1340 Powell Street at Broadway (approximately 1 mile away);
- Station 13 at 530 Sansome Street at Washington Street (less than 1 mile away); and
- Station 35, Pier 22½ (less than 1 mile away).

Emergency Medical Services

The closest hospital is Saint Francis Memorial Hospital, at 900 Hyde Street (approximately 2 miles away). Saint Francis Memorial Hospital treats more than 1,000,000 people every year. Saint Francis is a fully accredited community-based hospital, with 359 licensed beds (SFMH, 2012).

Emergency medical transportation to San Francisco hospitals is provided by a fleet of public and private ambulance services. SFFD also provides emergency medical services and transport in the project area.

Regulatory Setting

Federal

National Environmental Policy Act

National Environmental Policy Act (NEPA) regulations and guidance from the Council on Environmental Quality encourage federal agencies to consider pollution prevention in the preparation of environmental documents, including waste reduction and recycling.

State

California Environmental Quality Act

At the state level, the California Environmental Quality Act (CEQA) (California Public Resources Code Sections 21000-21178) and the CEQA Guidelines (14 California Code of Regulations 15000-15387) are the primary policies that require projects to analyze potential impacts to utilities and public services.

California Fire Code

State fire regulations are set forth in Sections 13000, et seq., of the California Health and Safety Code, which includes regulations concerning building standards (as set forth in Title 24 of the California Code of Regulations, the California Building Code), fire protection and notification systems, fire protection devices (such as fire extinguishers and smoke alarms), high-rise building and child-care facility standards, and fire suppression training. California Fire Code Section 403.2 addresses public safety for both indoor and outdoor gatherings, including emergency vehicle ingress and egress, fire protection, emergency medical services, public assembly areas and the directing of both attendees and vehicles (including the parking of vehicles), vendor and food concession distribution, and the need for law enforcement and fire and emergency medical services personnel at events.

California Integrated Waste Management Act (Assembly Bill 939)

The California Integrated Waste Management Act of 1989 established the Integrated Waste Management Board, required the implementation of integrated waste management plans, and mandated that, beginning in 2000, local jurisdictions divert at least 50 percent of all solid waste, with 1990 as the baseline level, and divert at least 75 percent of all solid waste by 2010.

Local

Domestic Water

San Francisco General Plan Policy 1.6: Design facilities to allow for flexibility, future expansion, full operation in the event of a seismic emergency, and security and safety for personnel, while still maintaining an inviting appearance that is in scale with neighborhood development.

San Francisco General Plan Policy 5.1: Maintain an adequate water distribution system within San Francisco.

San Francisco General Plan Policy 5.2: Exercise controls of development to correspond to the capabilities of the water supply and distribution system.

San Francisco General Plan Policy 6.1: Maintain a leak detection program to prevent the waste of fresh water.

Sanitary Sewer and Storm Drainage

San Francisco Building Code Requirements. The following sections of the San Francisco Building Code are applicable to the proposed project:

Plumbing Code, Section 306.2: Roofs, inner courts, vent shafts, light wells, or similar areas having rainwater drains shall discharge directly into a building drain or sewer, or to an approved alternate location based on approved geotechnical and engineering designs.

Building Code, Section 1506.1: All storm or casual water from roof areas that total more than 200 square feet shall drain or be conveyed directly to the building drain or storm drain or to an approved alternate location based on approved geotechnical and engineering design. Such drainage shall not be directed to flow onto adjacent property or over public sidewalks. Building projections not exceeding 12 inches in width are exempt from drainage requirements without area limitations.

San Francisco Stormwater Management Ordinance (Ordinance Number 83-10). Ordinance Number 83-10 requires the development and maintenance of stormwater management controls for specified activities that disturb 5,000 square feet or more of the ground surface, and are subject to building, planning, and subdivision approvals.

San Francisco Stormwater Design Guidelines. The SFPUC and the Port partnered to develop the San Francisco Stormwater Design Guidelines. The guidelines require new developments and redevelopment that disturb 5,000 square feet or more of the ground surface to manage stormwater on site. A Stormwater Control Plan reviewed and stamped by a licensed landscape architect, architect, or engineer is required to be submitted and approved by the Port and SFPUC (Port, 2003).

Solid Waste

San Francisco Construction and Demolition Debris Recovery Program (Ordinance Number 27-06). CCSF adopted the ordinance to create a mandatory program to maximize the recycling of mixed construction and demolition debris. The ordinance requires that mixed construction and demolition debris be transported off site by a registered transporter, and taken to a registered facility that can process and divert from landfill a minimum of 65 percent of the material generated from construction, demolition, or remodeling projects.

Zero Waste to Landfill Resolution. The Board of Supervisors adopted a goal of 75 percent landfill diversion by the year 2010, and a goal of zero waste by 2020, through Resolution Number 530-04 and Resolution Number 002-03, respectively.

San Francisco Mandatory Recycling and Composting Ordinance (Ordinance Number 100-09). As stated above, the Board of Supervisors adopted the goal of zero waste by 2020. Therefore, in 2009, the board passed the Mandatory Recycling and Composting Ordinance, requiring everyone in San Francisco to separate their refuse into recyclables, compostables, and landfill trash, and participate in recycling and composting programs.

Port of San Francisco Lease Requirements. All Port leases include provisions requiring that Port tenants comply with federal, state, and local regulations. When an illicit discharge is found, Port Real Estate initiates enforcement of the lease provisions. Targeted discharges include sanitary waste, hazardous materials, wash water, and construction-related materials.

Law Enforcement

San Francisco General Plan Policy 1.7: Combine police facilities with other public uses whenever multi-use facilities support planning goals, fulfill neighborhood needs, and meet police service needs.

San Francisco Police Code. The San Francisco Police Code contains regulations for various types of activities, such as automobile use, permitting and licensing, use of ports, and disorderly conduct. The San Francisco Police Code also provides specific regulations for Port activities, in Section 1614 (Regulations for Port Area). This section specifies lawful activities regarding operation of vessels, tolls, compliance, misdemeanors, and other infractions.

Fire Protection

San Francisco Fire Code. The San Francisco Fire Code was revised in 2007 to regulate and govern the safeguarding of life and property from fire and explosion hazards arising from the storage, handling, and use of hazardous substances, materials, and devices, and from conditions hazardous to life or property in the occupancy of buildings and premises; to provide for the issuance of permits, inspections, and other SFFD services; and to provide for the assessment and collection of fees for those permits, inspections, and services. The SFFD reviews building plans to ensure that fire and life safety is provided and maintained in the buildings that fall under its jurisdiction. The SFFD building plan review applies to the following occupancy types that are relevant to the proposed project:

- Assembly occupancies (including restaurants and other gathering places for 50 or more occupants);
- Storage occupancies where the potential exists for high-piled storage, as defined by Fire Code;
- Institutional occupancies; and
- Fire alarm and fire suppression systems.

In coordination with the San Francisco Department of Building Inspection and the Port Building Department, the SFFD conducts plan checks to ensure that all structures, occupancies, and systems outlined above are designed in accordance with the San Francisco Building Code prior to the issuance of a building permit.

Emergency Medical

San Francisco General Plan Policy 2.1: Ensure that new construction meets current structural and life safety standards.

San Francisco General Plan Policy 3.1: Promote greater public awareness of disaster risks, personal and business risk reduction, and personal and neighborhood emergency response.

3.15.3 Impact Evaluation

The analysis considered whether the project would:

- Exceed wastewater treatment requirements of the Regional Water Quality Control Board;
- Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental impacts;
- Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental impacts;
- Require water from sources without sufficient supplies to serve the project from existing entitlements and resources, or result in new or expanded entitlements;
- Result in a determination by the wastewater treatment provider that serves or may serve the project that it has inadequate capacity to serve the project's projected demand, in addition to the provider's existing commitments;
- Be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs;
- Be in violation of federal, state, and local statutes and regulations related to solid waste; or

- Result in substantial adverse physical impacts or significant environmental impacts associated with the construction of new or physically altered governmental facilities (police protection and fire protection) required to maintain acceptable service ratios, response times, or other performance objectives.

The following analysis assessed whether the implementation of the proposed project would directly or indirectly impact existing utilities (domestic water, sanitary sewer, storm drainage, and telecommunications) that serve the project area. Energy consumption is discussed separately in Section 3.14, Energy Consumption. For each utility, the analysis considered whether the project would have direct physical effects on the utility service, and whether the future demand on these services resulting from the implementation of the project would result in the deterioration of existing service levels.

In addition, the analysis in this section focused on whether the implementation of the proposed project would impact public services (fire protection and police protection,) in the vicinity of the project. The proposed project would not induce a permanent or temporary increase in population that would impact schools or parks; therefore, there would be no impact, and these resources are not discussed in detail in this section. A discussion of parklands and recreation is available in Section 3.4, Parklands and Recreation.

Public services were analyzed to determine whether implementation of the proposed project would require additional public services, or result in the deterioration of existing service levels. Public service staffing and resources would also be evaluated against the size and complexity of the future public service needs of the project. Both potential short-term construction impacts and long-term requirements of the project for each public service were evaluated.

Direct Impacts

Impact 3.15-1: Require the Construction of New or Physically Altered Governmental Facilities

No Action Alternative

Under the No Action Alternative, no modifications would be made to the existing Downtown San Francisco Ferry Terminal (Ferry Terminal) facilities to accommodate new or existing Water Emergency Transportation Authority (WETA) services. Therefore, the No Action Alternative would have no impact to public services (fire and police protection, emergency medical, schools, parks, or other public facilities), service ratios, response times, or performance objectives.

Action Alternative

The proposed project would not induce a permanent increase in population that would impact schools or parks, and therefore there would be no impact to these resources. Refer to Section 3.4, Parklands and Recreation, for a discussion of the project's potential to affect recreational resources. The proposed project would result in an increase in the number of people in the project area on a daily basis, and includes the construction of new facilities, some of which would expand public space. The project has the potential to increase the service burden on the public services (such as police and fire protection and emergency medical services) that are responsible for the project area. A more detailed discussion is provided below for the each of these services.

Law Enforcement Services. As discussed under fire services, the proposed project would increase pedestrian traffic in the area, but would not induce a permanent increase in population. The project area and immediate vicinity already experience a significant amount of pedestrian and public use. The area

through which passengers would pass on the way to destinations, such as the Harry Bridges Plaza and Justin Herman Plaza, are designed for high pedestrian traffic. The incremental increase in users from the proposed project would not be anticipated to substantially increase demand for law enforcement services.

Police services at the Ferry Building and surrounding vicinity are currently provided by the SFPD, with assistance from an officer employed by the Port. Additionally, the SFSD serves the area, as needed. There are currently three police stations within less than a mile of the project, and the area is actively patrolled by both the SFPD and the officer based at Pier 26. With existing police services in place, it is anticipated that the proposed project would not significantly impact the response times for police services.

Fire Protection Services. The project would not induce a permanent increase in population that would require the addition of fire protection services or facilities. The project would increase pedestrian traffic in the project area and its immediate vicinity; however, the project area is in a developed area with commercial and transit uses, and experiences a significant amount of pedestrian traffic and public use. The incremental increase in users from the proposed project would not be anticipated to substantially increase demand for fire protection services. A number of resources for fire protection are currently in place to provide service to the area. Fire protection is provided by the USCG and the SFFD, and the Port Fire Marshall works with the SFFD to provide additional service to the area. Three SFFD stations are in the vicinity of the project, and if vessels or waterfront facilities were to catch fire, the USCG would provide support. The USCG, SFFD, and Port operate under contingency plans, which establish protocols and appropriate actions in the event of emergencies. With the existing fire resources in place, it is anticipated that the proposed project would not adversely impact response times, service ratios, or performance objectives; and would not require the construction of new, or physical alteration of existing, fire protection facilities. In addition, the existing fire lane and fire protection service access from the water or the land to the project area would not be modified by the proposed project improvements.

Emergency Services. Similar to police and fire services, it is expected that existing emergency services would accommodate any emergencies that could occur in the project area; that the project would not affect service ratios, response times, or performance objectives; and that the construction of new, or physical alteration of existing, emergency services facilities would not be required. Saint Francis Memorial Hospital is less than 3 miles from the proposed project, and the SFFD also provides emergency services. In addition, the existing emergency evacuation routes and facilities on site (i.e., the Ferry Plaza) would not be modified by the proposed project improvements.

NEPA Determination. The proposed project would have no impact to schools or park facilities. The proposed project would not adversely impact police, fire, and emergency services.

CEQA Determination. The proposed project would have no impact to schools or park facilities. The proposed project would have a less-than-significant impact to police, fire, and emergency services.

Impact 3.15-2: Potential to Significantly Affect Water, Wastewater, and Solid Waste Supplies and/or Services

No Action Alternative

Under the No Action Alternative, no modifications would be made to the existing Ferry Terminal facilities to accommodate new or existing WETA services. Therefore, the No Action Alternative would have no impact to water or wastewater treatment. The increase in the number of passengers passing through the Ferry Terminal due under the No Action Alternative would increase the quantity of solid waste generated in the project area; however, the commercial and public spaces in the project area are currently heavily used, and waste collection and disposal systems currently exist. Therefore, no adverse impacts are anticipated as a result of the No Action Alternative.

Action Alternative

The project would only require a small amount of potable water, supplied at each gate for the purposes of washing down berthing facilities and queuing areas, as necessary. The proposed project would not induce permanent population growth that would, for example, require a significant increase in water supply to provide sufficient water supply to a new community. Potable water is currently supplied to the project area by SFPUC, and the proposed project would not generate a significant enough increase in water demand to require new or expanded water entitlements.

In the project area, sanitary wastewater is generated inside the Ferry Building and the Agriculture Building, which are currently served by CCSF's wastewater treatment facilities. Runoff generated during washing down of berthing facilities would not generate an increased demand on the existing wastewater facilities, because it would not be handled by the sanitary wastewater facilities. A more detailed discussion of the runoff generated by berthing facilities is available in Section 3.11, Hydrology and Water Quality. The proposed project does not include additional facilities that would generate an increase in wastewater; therefore, the project would have no adverse effect. Restrooms are provided for water transit passengers on board each vessel, and the vessels would be serviced at other locations in the water transit system (not at the Ferry Terminal); impacts on utilities at WETA's maintenance facilities have been addressed under separate environmental review processes for those facilities, and are not considered in this document. The project would result in additional use of the Ferry Building area, which could result in an increase in the use of the existing sanitary wastewater facilities at the Ferry Building or the Agriculture Building. However, because there are facilities on each vessel, and the project would not induce population growth in San Francisco, this would not affect the capacity of the sanitary system or CCSF facilities.

The increase in the number of passengers passing through the Ferry Terminal due to the proposed project would increase the quantity of solid waste generated in the project area. However, solid waste receptacles are provided on board each water transit vessel, and the vessels would be serviced (and trash removed) at other locations in the water transit system (not at the Ferry Terminal). The commercial and public spaces in the project area are currently heavily used, and waste collection and disposal systems currently exist. In addition, waste collected in San Francisco complies with CCSF's stringent solid waste programs requiring separation of refuse into recyclables, compostables, and landfill trash. The amount of solid waste generated by the project in the project area would be expected to be small, and there are collection and disposal systems in place that encourage recycling and composting.

NEPA Determination. The project would not adversely impact water supply, wastewater, and solid waste facilities.

CEQA Determination. The project's potential to impact water supply, wastewater, and solid waste facilities would be less than significant.

Impact 3.15-3. Potential to Require New Stormwater Drainage Facilities

No Action Alternative

Under the No Action Alternative, no modifications would be made to the existing Ferry Terminal facilities to accommodate new or existing WETA services. No additional impervious surface area would be developed. There would be no need for additional stormwater drainage facilities. Therefore, the No Action Alternative would have no impact to stormwater drainage facilities.

Action Alternative

The proposed project would introduce approximately 60,000 square feet of additional impervious surfaces (i.e., pier deck), a portion of which would require stormwater infrastructure upgrades. Stormwater would be managed through the use of bioretention planters and/or media filters, as described in Chapter 2.0, Alternatives.

Bioretention planters—each approximately 3 feet in width and 3 feet in depth, and composed of 1½ feet of bioretention soil mix and 1 foot of drainage rock—would provide for ½ foot of ponding. Planters would be placed above the highest estimated tide, along the south side of the new Gate A Access Pier, to capture stormwater from the new pier; and along the East Bayside Promenade, to capture runoff from the new promenade.

To conform to the grade changes in the project area, the Embarcadero Plaza would be designed to drain predominantly to the west. Along the northern and western edges of the plaza area, a seismic joint would also be required; it would allow seismic movement, and could also be designed to convey water for stormwater treatment to a media filter (sand filter). Alternatively, a landscaped stormwater bioretention and water quality treatment area adjacent to the promenade and the Pier 14 breakwater could be installed to treat stormwater from the Embarcadero Plaza before it enters San Francisco Bay.

The proposed project would be developed in accordance with CCSF and the Port's stormwater management guidelines, and the specific stormwater management design would be determined as part of the project's final design. It is anticipated that with the proposed improvements to the onsite stormwater drainage, facilities operated by CCSF would not be affected and stormwater would be managed on site.

NEPA Determination. The proposed project would not have adverse impacts on stormwater drainage facilities.

CEQA Determination. The proposed project would have a less-than-significant impact on stormwater drainage facilities.

Construction Impacts

The No Action Alternative would not result in any physical changes to the Ferry Terminal, and no construction activities would be required. Therefore, there would be no construction impacts on utilities and public services.

Impact 3.15-4: Insufficient Permitted Capacity of Solid Waste Landfill

The proposed project would be subject to the San Francisco Construction and Demolition Debris Recovery Program (Ordinance Number 27-06), which requires that 65 percent of mixed construction and demolition waste be diverted from landfills. The San Francisco Board of Supervisors also adopted a goal of 75 percent landfill diversion by the year 2010, and a goal of zero waste by 2020, through Resolution Number 530-04 and Resolution Number 002-03. A licensed solid waste hauler (e.g., Recology) would provide the construction and demolition nonhazardous waste collection services for project construction and demolition. Upon sorting at the transfer station, it is anticipated that construction waste generated by the proposed project that could not be diverted (recycled or reused) would be accepted at the Altamont Landfill, which has a remaining capacity of approximately 46 million cubic yards (75 percent of its permitted capacity). It is anticipated that the proposed project would generate approximately 3,823 cubic yards of construction and demolition waste. The Altamont Landfill would have sufficient capacity to accommodate the proposed project.

NEPA Determination. The project would not contribute to landfills with insufficient permitted capacity, and therefore no adverse impacts would occur.

CEQA Determination. The proposed project's impact on contributing to landfills with insufficient permitted capacity would be less than significant.

Impact 3.15-5: Potential to Violate Federal, State, and Local Statutes and Regulations Related to Solid Waste

As discussed above, the proposed project would be subject to Ordinance Number 27-06, which requires that 65 percent of mixed construction and demolition debris be diverted from landfills; and Resolution Number 530-04 and Resolution Number 002-03, which adopted a goal of 75 percent landfill diversion by the year 2010, and a goal of zero waste by 2020. It is anticipated that demolition waste from the proposed project would be disposed of at the nearest waste and recycling facility (identified in Section 3.15.2), in accordance with CCSF requirements. The proposed project would comply with all pertinent federal, state, and local requirements regarding solid waste.

NEPA Determination. The project would not violate federal, state, and local statutes and regulations related to solid waste, and therefore no adverse impacts would occur.

CEQA Determination. The proposed project would have a less-than-significant impact on violating federal, state, and local statutes and regulations related to solid waste.

Impact 3.15-6: Potential to Adversely Impact Existing Underground Utilities During Construction Activities

Utilities for water, wastewater, and telecommunications are located underground along The Embarcadero; and, in some instances, along the Embarcadero Promenade. The exact locations and depths of utility lines are currently not known. If project construction were to disrupt or damage underground utilities in the project area, this would be an adverse and potentially significant effect. To avoid disruption to public services, WETA would, prior to the start of construction activities, comply with Mitigation Measure UTIL-1, Consultation and Coordination with Utility Provider.

NEPA Determination. Project construction could disrupt or damage underground utilities in the project area, a potentially adverse impact. With implementation of Mitigation Measure UTIL-1, disruption to public utilities is unlikely to occur, and impacts from project construction would be reduced and would not be adverse.

CEQA Determination. Project construction could disrupt or damage underground utilities in the project area, a potentially significant impact. With implementation of Mitigation Measure UTIL-1, impacts to underground utilities during project construction would be reduced to a less-than-significant level.

Cumulative Impacts

Impact 3.15-7: Potential to Result in Cumulative Impacts on Utilities and Public Services

The geographical context of cumulative public service impacts analysis is the City of San Francisco. The proposed project could increase demand on utilities and public services in the study area. Although the impacts from the proposed project would not be substantial and have been determined to be less than significant and not adverse, other reasonably foreseeable projects in the study area (along and adjacent to San Francisco's eastern waterfront) could result in similar impacts. The other reasonably foreseeable projects in the study area (refer to Table 3.1-1) comprise waterfront development, public facility upgrades, and transportation developments that have been or are currently in the planning phase. The

proposed project, in combination with other projects in the area, could have the potential to result in cumulatively adverse increases in demand on utilities (water, wastewater, and solid waste) and public services (police, fire, and emergency medical).

Utilities

As stated above, the project area has existing water and wastewater facilities in the area. The proposed project is not anticipated to significantly increase demand on water. The project design would address stormwater generated from the project area. CCSF has a number of plans and policies to address water and wastewater. The General Plan includes policies to maintain an adequate water distribution system and stormwater management ordinances. There are also a number of building code requirements for water conservation and wastewater management. Therefore, the proposed project would not contribute to cumulative impacts associated with water, wastewater, or stormwater treatment in San Francisco.

The proposed project, and those listed in Table 3.1-1, would be subject to federal, state, and local regulations for minimizing solid waste. As discussed above, CCSF has a stringent solid waste program. The Mandatory Recycling and Composting Ordinance requires the separation of refuse into recyclables, compostable, and landfill trash. Solid waste for all of the reasonably foreseeable projects would be managed according to CCSF's ordinance reducing solid waste. In addition, the solid waste generated by the proposed project would be minimal. Therefore, the proposed project's contribution to cumulative impacts on solid waste services and disposal capacity would not be considerable.

Public Services

San Francisco has an existing police and fire department, with stations throughout the city and several in the project vicinity. Law enforcement is provided by the SFPD in conjunction with the SFSD. Fire protection services are provided by the SFFD, and also the USCG. In the event of an emergency, medical services can be provided by the SFFD and SFPD. There are also several hospitals in San Francisco, with the nearest less than 3 miles from the project site. Additionally, the proposed project and other projects listed in Table 3.1-1 would be subject to federal, state, and local regulations for providing adequate public services to the community. The proposed project would not result in permanent population growth, and would not contribute to impacts on schools and parklands. It is anticipated that the existing public services provided would be sufficient to serve the project area. Therefore, project's contribution to cumulative public service impacts would not be considerable.

NEPA Determination. The project would not contribute to cumulative adverse impacts to public services and utilities.

CEQA Determination. Cumulative impacts to public services and utilities would be less than significant.

3.15.4 Mitigation Measures

Mitigation Measure UTIL-1: Consultation and Coordination with Utility Providers

Prior to the start of construction activities, WETA will consult with public utility providers who have infrastructure in the immediate vicinity of the proposed project improvements, to determine the exact location and depth of utility lines.

3.16 SOCIOECONOMICS

3.16.1 Introduction to the Analysis

Socioeconomic issues relevant to the evaluation of environmental impacts include labor force and employment, population, poverty status, and housing. This section describes existing population, economic, and housing conditions at varying geographic levels, including the region, the City and County of San Francisco, and the immediate project vicinity. The proposed project would not affect population, housing, poverty status, or employment because it neither constructs nor removes any new housing units, and because it is likely that project-related construction jobs would be filled by workers who already reside in the San Francisco Bay Area.

3.16.2 Affected Environment

This section presents socioeconomic data pertinent to the environmental analysis for the Water Emergency Transportation Authority's (WETA) proposed Downtown San Francisco Ferry Terminal Expansion Project (project). Socioeconomic information is presented for the City and County of San Francisco as a whole, and for the population residing within approximately ½ mile of the project site. For information on regional growth trends and projections (including regional employment and housing data) for the nine-county Bay Area, refer to Section 3.17, Regional Growth.

Existing Conditions

San Francisco Population

Table 3.16-1 presents information on population trends and projections in the City and County of San Francisco, which represents approximately 11 percent of the Bay Area region's residents. The city's population increased by 4.3 percent—from 776,733 in 2000 to approximately 810,000 in 2010. The population is expected to increase an additional 19.6 percent to 969,000 by 2035, with the average household size remaining stable at 2.28 persons. The city's population is expected to increase 19.6 percent between 2010 and 2035, but the number of jobs in the city is expected to increase by 41.8 percent during the same time period, ensuring that the city will remain an important commute destination for people living throughout the region—although approximately 25 percent of city residents who are employed commute to work outside of the city (ABAG, 2009b; SF Planning, 2011a).

Table 3.16-1
City and County of San Francisco Population Trends and Projections

	2000	2005	2010	2015	2020	2025	2030	2035
Population	776,733	795,800	810,000	837,500	867,100	900,500	934,800	969,000
Population residing in Households[1]	756,976	775,500	789,100	816,400	845,800	879,200	913,000	947,200
Households	329,700	338,920	346,680	359,170	372,750	386,800	400,700	415,000
Average Household Size	2.3	2.29	2.28	2.27	2.27	2.27	2.28	2.28
Employed Residents	437,533	388,100	411,900	424,800	458,300	493,500	520,700	543,600
Mean Household Income	$98,300	$97,400	$102,200	$107,900	$113,800	$120,100	$126,700	$133,600
Total Jobs	642,500	553,090	568,730	606,540	647,190	694,830	748,100	806,830

Source: ABAG, 2009b.

Note:

[1] Excludes persons living in group quarters such as barracks, prisons, dormitories, or shelters.

The 2010 census presents a portrait of the City and County of San Francisco's population as racially diverse, relatively affluent, and aging. Families with children represent a small proportion of all households, and the city has the distinction of having the fewest children of any major city in the United States (SF Planning, 2011a). In 2010, approximately 58 percent of the city's population was minority.[1] This was comparable to the figures for the state and nation as a whole. California had a slightly higher percentage of minority population in 2010 (60 percent), while the United States had a slightly lower percentage (56 percent). In 2010, 11.9 percent of San Francisco's population was living below the poverty level—compared with 13.7 percent in California and 13.8 percent in the United States.

Project Area Population

Population residing in the project vicinity is relatively sparse. Figure 3.16-1 shows the 2010 census blocks that lie completely or partially within a ¼-mile and ½-mile radius of the project area. As this figure shows, there is no population residing in or immediately adjacent to the project area. Of the 132 census blocks that lie entirely or almost entirely within the ½-mile radius, more than half (53 percent) had no resident population in 2010. Another 36 census blocks (27 percent) had populations of fewer than 10 persons. These zero or very low population census blocks are those that encompass the waterfront piers, or that are developed with commercial buildings such as the San Francisco Ferry Building (Ferry Building) itself, or with major downtown office and service centers such as the Embarcadero Center, One Maritime Plaza, and One Market Plaza. Only 26 of the census blocks (20 percent) within ½ mile of the project site had resident populations of ten or more persons, and the majority of these blocks were more than ¼ mile from the project site. Most of the resident population is concentrated in several large residential or mixed-use developments, including Golden Gateway Commons, The Gateway, and Bridgeway Plaza north of Market Street; and Rincon Center, The Infinity, BayCrest, BridgeView Condominiums, The Watermark, and Bayside Village south of Market Street. Table 3.16-2 (on the following page) presents the total population by Census Tract and Block Group within a ½-mile radius of the project area.

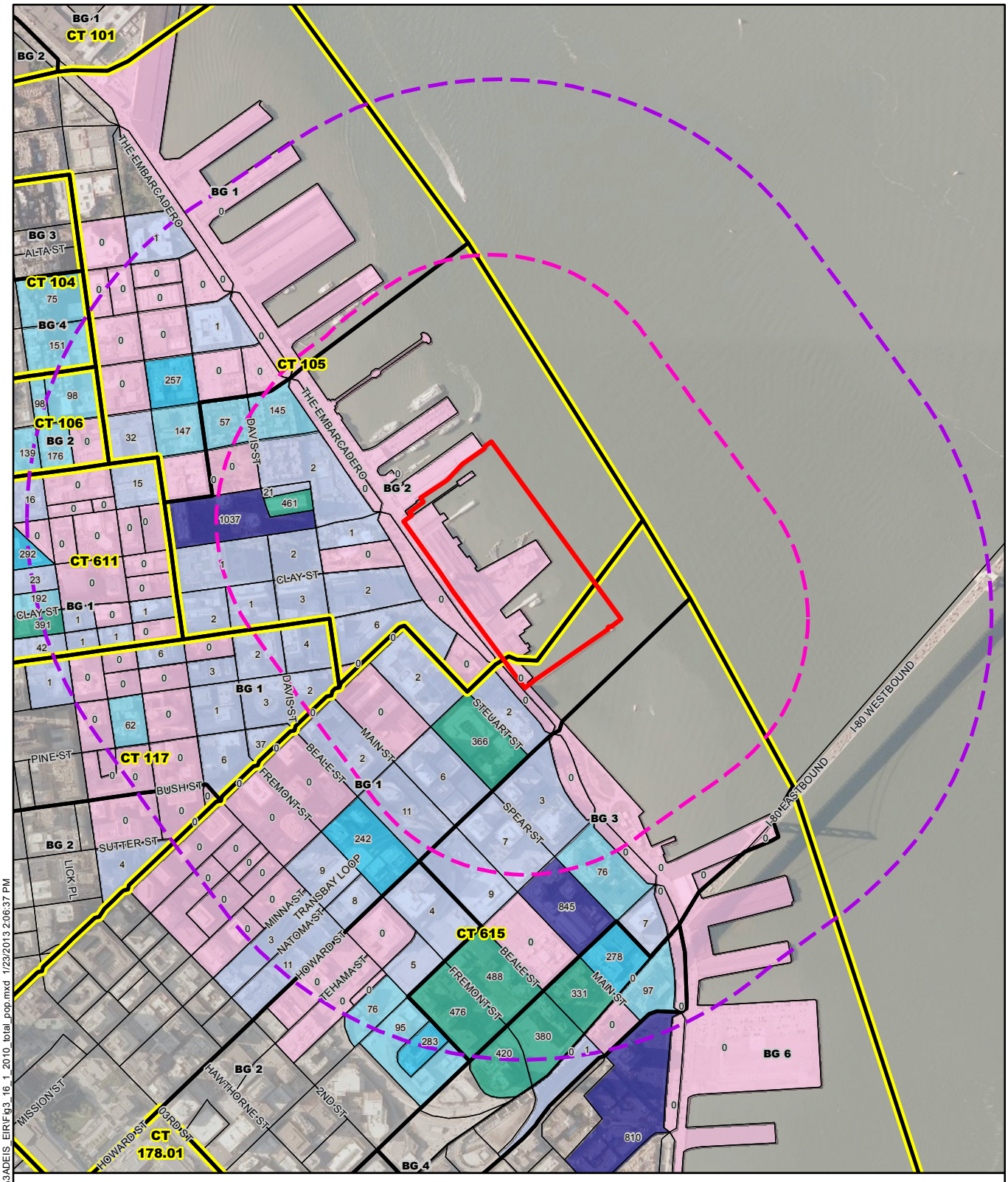
The project area lies partially in two Census Tracts: 105 and 615. In 2010, Census Tract 105 had a total resident population of 2,685 persons, of whom 35 percent were minority. Census Tract 615 had a total population of 11,502 residents, of whom 42 percent were minority. Both of these are well below the citywide minority population (58 percent).

Figure 3.16-2 shows the percent of the population in each census block that is minority.[2]

Of the 39 census blocks in Census Tract 105, 25 of them (64 percent) have either no population, or no minority population. In ten of the remaining blocks (26 percent), minorities comprise less than 50 percent of the population. Only four census blocks were identified as having residential populations that are 50 percent or more minority. Two of these are within ¼ mile of the project area—one just west of The Embarcadero between Washington and Clay streets (a public open space that reported one resident in 2010); and the other on the southern side of Jackson Street, west of Drumm Street (a strip of townhomes fronting on Jackson Street—part of the Gateway Apartments and Townhomes development—with 21 residents reported in 2010, of whom 11 were minority). The other two census blocks with more than 50 percent minority residents are more than ¼ mile from the project area, on the northern and southern sides of Broadway Street, between Front and Battery streets. The block on the southern side of Broadway reported a resident population of 147 persons in 2010, mostly living at 733 Front Street, a luxury condominium development that was completely renovated in 2007 (Klampert, 2012). On the northern

[1] Minority includes all persons who are not "White Only/Not Hispanic or Latino"—i.e., it includes persons identified as belonging to other race groups besides white (alone or in combination), or as being of Hispanic or Latino origin (of any race, including White).

[2] i.e., not white and not Hispanic or Latino.



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Source: Imagery, NAIP, 2010; Population and Census Boundaries, U.S. Census Bureau, 2010.

TOTAL POPULATION IN THE PROJECT VICINITY (CENSUS 2010)

Downtown San Francisco
Ferry Terminal Expansion Project
28067812 San Francisco, California

FIGURE 3.16-1

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Source: Imagery, NAIP, 2010; Population and Census Boundaries, U.S. Census Bureau, 2010.

PERCENT MINORITY POPULATION IN THE PROJECT VICINITY (CENSUS 2010)

Downtown San Francisco
Ferry Terminal Expansion Project
28067812 San Francisco, California

FIGURE 3.16-2

Table 3.16-2
Total Population Within ½ Mile of the Project Area

Census Tract	Block Group	Total
Census Tract 104	Block Group 4	226
	Block Group Subtotal	**226**
Census Tract 105	Block Group 1	438
	Block Group 2	1,741
	Block Group Subtotal	**2,179**
Census Tract 106	Block Group 2	511
	Block Group Subtotal	**511**
Census Tract 117	Block Group 1	127
	Block Group 2	4
	Block Group Subtotal	**131**
Census Tract 611	Block Group 1	975
	Block Group Subtotal	975
Census Tract 615.00	Block Group 1	662
	Block Group 2	463
	Block Group 3	1,911
	Block Group 4	1,507
	Block Group 6	810
	Block Group Subtotal	**5,353**
Total Population		**9,375**

side of Broadway Street is the Broadway Family Apartment Complex, which stretches between Battery and Front streets, with an interior courtyard. This complex contains 81 housing units that are all affordable to households earning 60 percent or less of the Area Median Income. This is a relatively new housing complex that was constructed in 2008 (Saadani, 2012; CCDC, 2012a).

Census Tract 615 shows a similar pattern of minority population distribution. There are no census blocks within ¼ mile of the project area that have minority populations greater than 50 percent. Several census blocks have minority populations greater than 50 percent, but these are more than ¼ mile from the project area, and for the most part represent new Class A condominium developments in the South of Market Area.

Interviews with property managers of residential complexes in the site vicinity indicate that the resident population is racially quite mixed, reflecting the racial diversity of the city, although there are relatively high proportions of young Asian professionals, and relatively few persons of Hispanic origin in residence (Brooks, 2011; Dirienzo, 2011). The exception is the Broadway Family Housing complex, which is occupied predominantly by low-income Asian households (Saadani, 2012).

Poverty

The U.S. Census Bureau uses the federal government's official poverty threshold definition, which is based on income, family size, and age. This nationwide poverty definition is adjusted annually to reflect

changes in the Consumer Price Index, but it is not adjusted for regional variations in cost of living (U.S. Census Bureau, 2012).

The U.S. Census Bureau estimates that less than 12 percent of San Francisco's population was living below the poverty threshold in 2010. This is lower than both the statewide rate (14.2 percent) and the nationwide rate (14.3 percent) in 2010. In the two census tracts that encompass the project site, the poverty rates were approximately 6 percent (Census Tract 105) and 16 percent (Census Tract 615), respectively. Census Tract 105 lies mostly within ¼ mile of the project area, stretching along the waterfront from Mission Street north to Broadway. Census Tract 615 (whose boundaries changed in the 2010 census) stretches from Market and Mission streets southward, encompassing a considerable part of the South of Market area east of Fourth Street.

Figure 3.16-3 shows the percent of persons living below the poverty threshold for individual block groups in the census tracts, based on the 2006-2010 American Community Survey, which represents the most recent estimates of poverty status available from the Census Bureau (U.S. Department of Commerce, 2011; SF Planning, 2010). These estimates, calculated as 5-year averages, are based on sample data that the census bureau warns may be unreliable for geographic units smaller than census tracts as a whole, due to small sample size (Gemignani, 2012). Nonetheless, the block group data can be used to identify general patterns of where poverty may be concentrated.

As can be seen from Figure 3.16-3, most of the population within ¼ mile of the project area had a percentage of persons living below the poverty threshold that was well below the citywide average. Only a very small portion of the area (the block group west of Drumm Street) had a higher rate of poverty than the City and County of San Francisco as a whole, and this is likely to be a statistical anomaly, reflecting poverty rates in portions of the Tenderloin and Chinatown that lie further west in this census block, rather than any resident population in the commercial developments in and adjacent to the Embarcadero Center.[3]

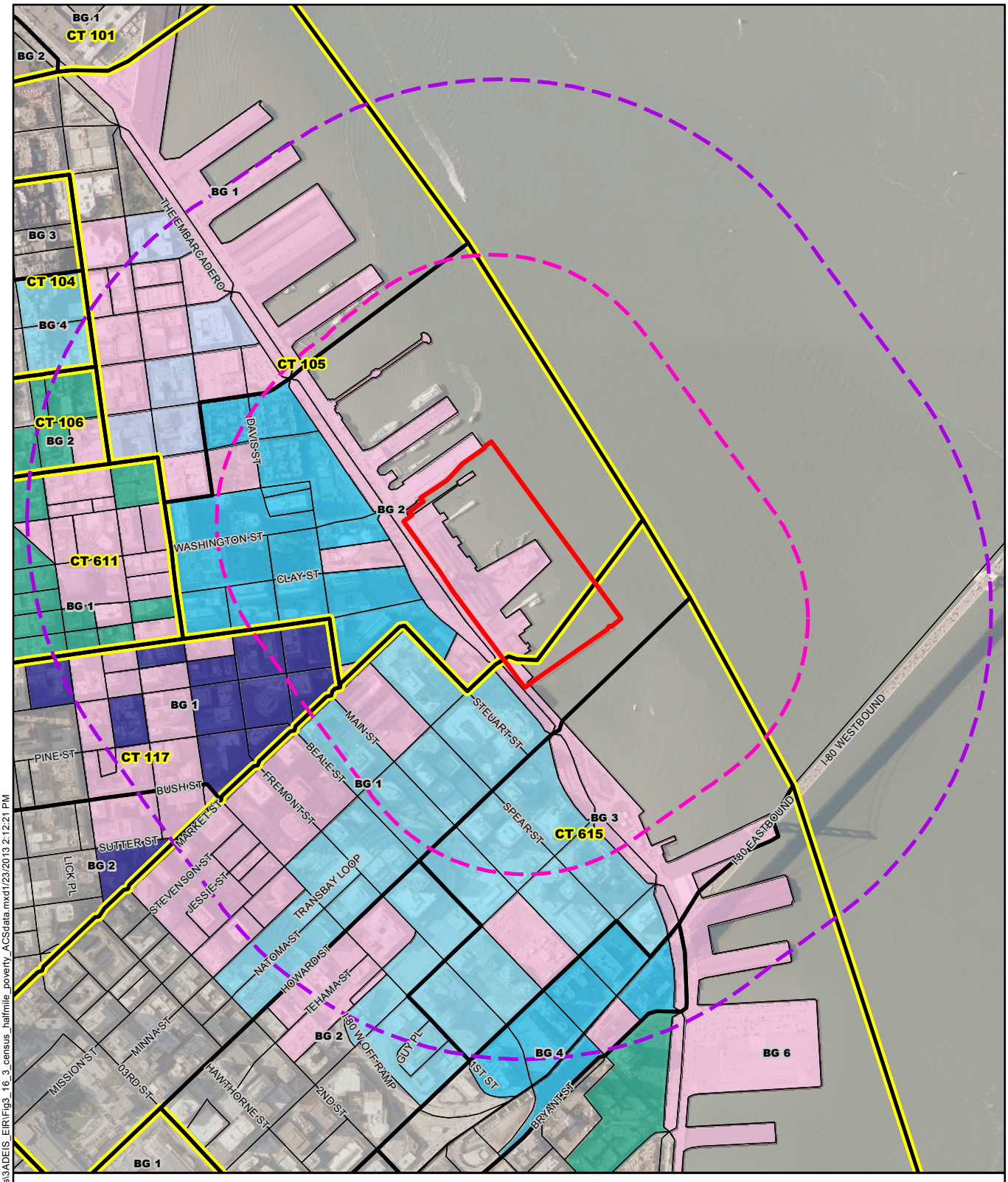
Employment

San Francisco is the most urbanized of the nine Bay Area counties, and it has served as a primary employment hub for the region since the 1849 Gold Rush. In San Francisco, the number of employed residents declined between 2000 and 2010, as did the mean household income. The number of employed residents in the city is expected to increase from 411,900 in 2010 to 520,700 in 2030, with the mean household income increasing from $102,200 to $126,700 during the same time period (ABAG, 2009b).

San Francisco's labor force decreased from 473,000 in 2000 to 420,500 in 2005; and increased to 459,800 by 2009. Total employment declined from a peak of more than 608,000 jobs in 2000 to fewer than 549,000 jobs in 2009, a 9.7 percent decline, while the local unemployment rate rose from 3.4 percent in 2000 to 8.9 percent in 2009. The unemployment rate rose further, to 9.5 percent in 2010, compared with 12.4 percent statewide. San Francisco's share of regional jobs has remained around 16 to 17 percent since 2000 (California EDD, 2011; SF Planning, 2010).

As shown in Table 3.16-1, total jobs declined from 643,000 to 569,000 between 2000 and 2010, but are expected to increase substantially by 2030 to 748,000, with Professional and Managerial Services remaining the sector employing the largest number of people, followed by the Health and Educational Services sector (ABAG, 2009b).

[3] Representatives of the State Census Data Center in Sacramento and the U.S. Census Bureau's Regional office in Seattle were unable to explain why small numbers (1-4) of residents were showing up in the Embarcadero Center blocks, because the 2010 census did not enumerate homeless persons. A property management representative for the Embarcadero Center confirmed that there are no residences or residential uses of any kind in the Embarcadero Center (Farnam, 2012; Fitzpatrick, 2012; Gemignani, 2012).



POVERTY STATUS IN THE PROJECT VICINITY (AMERICAN COMMUNITY SURVEY, 2006-2010)

Downtown San Francisco
Ferry Terminal Expansion Project
28067812 San Francisco, California

FIGURE 3.16-3

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Source: Imagery, NAIP, 2010; Population and Census Boundaries, U.S. Census Bureau, 2010, and American Community Survey (2006-2010).

In 2000, 280,000 people commuted into San Francisco daily for work. By 2020, this number is expected to increase by 23.2 percent, to 345,000. Residents of the region commute to San Francisco by private automobile, or by regional transit systems, including ferries, Bay Area Rapid Transit, and Caltrain. Although more than 40 percent of all San Francisco business establishments are very small, home-based businesses with four or fewer employees, the larger employers (those with 50 or more employees) and most jobs are concentrated in the downtown Financial District and South of Market District, which are accessible from the Downtown San Francisco Ferry Terminal (Ferry Terminal) (ABAG, 2009b; SF Planning, 2010).

Housing

In 2009, there were an estimated 365,050 housing units (or just over 13 percent of all housing units in the region) in the City and County of San Francisco (ABAG, 2009a). Housing costs in San Francisco are among the highest in the region, and are substantially above comparable costs in the state and nation, as shown in Table 3.16-3.

Table 3.16-3
Comparison of Median Home Sales Prices, January 2011

Area	Single Family Home	Condominium
San Francisco	$615,000	$652,500
California	$271,300	$236,400
United States	$170,600	$164,200

Source: SF Planning, 2011a.

Most of the housing units within ½ mile of the project site are concentrated in several major residential or mixed-use developments, including Golden Gateway Commons, The Gateway, and Bridgeway Plaza north of Market Street; and The Infinity, BayCrest Condominiums, BridgeView Condominiums, The Watermark, and Bayside Village south of Market Street. Most of these developments offer high-end or luxury condominiums or rental units close to job centers in the downtown, although some also contain a small percentage of below-market-rate units, as required under their development agreements. The Broadway Family Apartments complex at 810 Battery Street is the exception, providing affordable housing to families earning 60 percent or less of the Area Median Income.

Future planned developments, such as the proposed seven-tower Transbay Redevelopment District, and development at 8 Washington, are likely to bring additional residential population to the project area in the future. It is expected that most of these new units will be similar to those recently constructed in the project area—i.e., smaller luxury condominium and apartment units that will attract a racially mixed and relatively affluent population of younger professionals, although the Chinatown Community Development Center is planning to construct a 75-unit family housing development in the near future at 235 Broadway (CCDC, 2012b).

Regulatory Setting

Both the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA) require consideration of social and economic impacts. Local jurisdictions also adopt goals and policies that can address population growth and distribution, or quality-of-life issues related to proposed transportation improvement projects. In addition, other legislation specifically requires analysis of potential environmental justice impacts. Relevant laws and guidelines are summarized below.

Federal

NEPA calls for the integrated use of social sciences to assess the potential impacts of federal projects on the "human environment." Regulations issued by the Council on Environmental Quality for implementing NEPA suggest that the "human environment" should be interpreted comprehensively to include "the natural and physical environment and the relationship of people with that environment" (40 Code of Federal Regulations [CFR] 1508.14). Agencies are directed to assess economic and social effects of projects, whether direct, indirect, or cumulative (40 CFR 1508.8).

The Uniform Relocation Assistance and Real Property Acquisition Policies Act (42 United States Code, Chapter 61) aims to ensure that persons displaced as a result of a federal action, or an undertaking involving federal funds, are treated fairly, consistently, and equitably, so that such persons will not suffer disproportionate injuries as a result of projects designed for the benefit of the public as a whole.

State

CEQA defines the "environment" as primarily physical conditions (including land, air, water, minerals, flora, fauna, noise, and objects of historic or aesthetic significance) that do not include social or economic resources (CEQA Section 21060.5). CEQA does not treat social and economic changes that might result from a project as significant environmental effects in and of themselves, although they may be used to determine the significance of a physical change in the environment (CEQA Guidelines Sections 15064[e], 15131, and 15360). CEQA requires that environmental documents "discuss the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment" (CEQA Guidelines, Section 15126.2[d]).

The California Relocation Act (Government Code Section 7260 et seq.), in parallel with the comparable federal law, requires state and local governments to provide relocation assistance and benefits to persons displaced by projects undertaken by state entities that do not involve federal funds.

Local

The project site lies in the jurisdiction of the City and County of San Francisco (CCSF). State law requires that each local jurisdiction adopt a comprehensive general plan to guide its physical development. CCSF's General Plan is the official city policy document guiding planned development in its jurisdiction. The Commerce and Industry Element and the Housing Element of the CCSF's General Plan include policies and objectives pertaining to employment, population, and housing issues. The Commerce and Industry Element encourages economic development and contains policies to manage economic growth in the city. The Housing Element evaluates housing needs in comparison to land development capacity, and provides policies aimed at improving capacity and fostering affordable housing development.

The San Francisco Sustainability Plan, adopted in 1997, contains policy guidance in ten specific environmental issue areas and five general areas, including economic development and environmental justice. In addition, Chapter 6.22 and Chapter 83 of the San Francisco Administrative Code address requirements for local hiring for certain activities taking place in the city, including infrastructure improvement projects.

3.16.3 Impact Evaluation

This section includes an analysis and determination of the potential adverse and beneficial impacts of the proposed project on socioeconomic conditions in the region and the project area. It identifies potential impacts on established neighborhoods; population and housing; and employment and income that would

result from implementation of either of the project alternatives. For an analysis of Environmental Justice impacts, refer to Section 3.17, Environmental Justice.

The analysis considers whether the project would:

- Result in adverse changes in the character and cohesion of an established neighborhood, such as increased noise, traffic, access restrictions, parking loss or intrusion, or pedestrian safety hazards, so that the integrity of the neighborhood as a whole is changed (but not necessarily individual properties);
- Displace homes or businesses without adequate replacement resources; or
- Disrupt or divide the physical arrangement of an established community, or remove neighborhood amenities.

To assess whether the project would result in any of the above, and based on a review of the project description and details of the project implementation, the socioeconomics analysis determined whether the project would result in displacement of homes or businesses without adequate replacement resources; considered whether the project would result in the loss of community facilities or amenities; and determined whether the project would split or alter the character of the existing community, impede access to key community facilities or amenities, or otherwise result in a deterioration in quality of living.

Direct Impacts

Impact 3.16-1: Potential to Cause Adverse Changes in the Character and Cohesion of or Physically Divide or Disrupt an Established Neighborhood

No Action Alternative

The No Action Alternative would not involve making any improvements to existing facilities at the Ferry Terminal. All planned new and expanded routes would be accommodated at the existing Ferry Terminal facilities. This could result in some change in the character of the Ferry Terminal area. With the increased use that is projected to occur (in the absence of the proposed improvements), the Ferry Terminal area could become a less enjoyable place for business patrons and pedestrians to use, due to overcrowding of plazas, walkways, and queuing areas. As a result, shops, restaurants, and ferries could become more difficult to access easily, although the character of the area as a waterfront transportation hub would not change. This would be a negligible impact.

Action Alternative

The proposed project would result in changes to Ferry Terminal facilities along the waterfront, behind the existing Ferry Building and adjacent plazas, where water transit gates and pedestrian walkways along the waterfront currently exist. Traffic impacts and noise impacts are summarized in Section 3.2, Transportation and Circulation; and Section 3.7, Noise and Vibration, respectively. The proposed project would not change the character of the area; in fact, the proposed improvements would contribute to the water-oriented public facilities and activities already established in this area. Although the proposed project would result in greater pedestrian traffic through, and pedestrian use of, the project area, this area is currently a developed and highly active commercial, transportation, and public space. The proposed project would improve pedestrian circulation and flow in the project area by expanding the circulation areas available around the Ferry Building and the water transit gates. This would address the overcrowding of plazas, walkways, and queuing areas discussed above for the No Action Alternative. These enhancements to circulation and addition of other amenities (e.g., better signage and weather

protection) would enhance user enjoyment of the area, including those users accessing the retail uses within the Ferry Building.

Access to the project area, including the businesses within the project area, would not be blocked or modified by implementation of the proposed project. Project improvements would be constructed on areas that are currently open water or serve as access to water transit gates (see Figure 2-9, Construction Zone). The project would not affect the areas used to access the businesses in the project area (i.e., the areas in front of and along the sides of the Ferry Building; the Ferry Plaza behind the Ferry Building; and the access to the Agriculture Building). Therefore, the project would not disrupt or divide the physical arrangement of an established community, or remove neighborhood amenities.

The project would not adversely affect an existing residential community, because no residential community exists at the project site, and the closest residential uses are west of The Embarcadero.

The project's public space and circulation improvements (e.g., creation of the Embarcadero Plaza) could benefit community cohesion by making the Ferry Terminal area an even more attractive place to visit, which would further support the businesses operating in the project area.

NEPA Determination. The proposed project would not impact community character or community cohesion, or result in the physical division of a community.

CEQA Determination. The proposed project would have no impact on community character or cohesion community cohesion, or result in the physical division of a community.

Impact 3.16-2: Potential to Displace Homes or Businesses without Adequate Replacement Resources

No Action Alternative

The No Action Alternative would not involve making any improvements to existing facilities at the Ferry Terminal. All planned new and expanded routes would be accommodated at the existing Ferry Terminal facilities. No homes are in the project area. No businesses would be displaced under the No Action Alternative.

Action Alternative

The proposed project would not displace any homes or businesses in the project area. Sinbad's bar and restaurant is in the project area, where construction of the project improvements is proposed in the South Basin. However, in April 2012, San Francisco Bay Conservation and Development Commission amended the Special Area Plan to permit temporary uses for America's Cup race events, and to require public benefits to mitigate impacts associated with the events, including a requirement that the America's Cup Project remove the restaurant at Pier 2 by March 2015. Therefore, Sinbad's would be removed by 2015 as part of the America's Cup Project, and would not be affected by the Action Alternative. A portion of Pier 2 is currently being used for a limited amount of parking associated with Sinbad's restaurant. When the restaurant is removed, those parking spaces would also be vacated, and these spaces would not be relocated in the project area. Because the number of spaces is minor and the business they serve would be removed, the removal of these spaces would be considered negligible.

NEPA Determination. No homes or businesses would be displaced by the project; therefore, there would be no impact.

CEQA Determination. No homes or businesses would be displaced by the project; therefore, there would be no impact.

Indirect Impacts

Impact 3.16-3: Potential to Indirectly Economically Impact the Businesses in the Project Area

No Action Alternative

Because the No Action Alternative would not involve any improvements to the Ferry Terminal, this alternative would not result in indirect socioeconomic impacts.

Action Alternative

Businesses in the project area and its vicinity would benefit indirectly from both construction workforce spending (e.g., meals and incidentals) and project operations. Implementation of the proposed project would facilitate the full expansion of WETA's regional services, and would be expected to increase water transit passenger use of the Ferry Terminal. Ridership for WETA services would increase from 5,100 passengers a day to 25,700 passengers a day. The project would also improve the quality of amenities in the project area (e.g., creation of the Embarcadero Plaza), making it an even more attractive place for water transit passengers, or for city residents or tourists to visit. These would be beneficial indirect impacts to local businesses.

Access to the businesses within the project area would not be blocked or modified by implementation of the proposed project. Therefore, the project would not result in indirect adverse impacts to local businesses.

NEPA Determination. The project would have indirect beneficial economic impacts to local businesses; no adverse impacts would occur.

CEQA Determination. A CEQA determination is not applicable, because CEQA does not consider economic benefits to be environmental impacts.

Construction Impacts

The No Action Alternative would not result in any physical changes to the Ferry Terminal, and no construction activities would be required. Therefore, there would not be any adverse construction-related impacts on socioeconomics.

Impact 3.16-4: Potential to Impact Businesses in the Project Area and the Region During Construction

Project implementation would bring some economic benefits to the region as a result of expenditures for construction materials purchasing and construction payroll. Construction employment would result in payroll income for some households in the region, as well as indirect and induced economic benefits associated with material purchasing and construction worker spending. Although the construction workforce would be relatively small, and the amount of construction planned would be modest, these would be beneficial impacts to the businesses in the project areas as well as to other businesses in the region.

Project construction would not block or modify access to the Ferry Building, Ferry Plaza, or businesses in the project area. In addition, signage with directions to the offices and businesses in the project area would be provided, if necessary, to ensure that effects on normal business operations would be minimized. Therefore, the project would not result in adverse impacts to local businesses during construction.

NEPA Determination. The project would have beneficial economic impacts to the region during construction; no adverse impacts would occur.

CEQA Determination. A CEQA determination is not applicable, because CEQA does not consider economic benefits to be environmental impacts.

Impact 3.16-5: Potential Impacts on Employment, Population, Housing, and Income During Construction

The construction workforce required for demolition and construction activities would vary monthly, with a maximum workforce of approximately 25 people. Some activities, such as dredging, would require a much smaller number of workers (4 to 6 people). The Bay Area has a relatively large and diversified resident labor force, with the skills and availability to meet all of the projected construction workforce needs. This project would benefit employment during construction, and would not be expected to affect population or housing in the region.

NEPA Determination. The proposed project would have a beneficial impact on employment and income, and no impact on population and housing income in the region and the project area during construction. No adverse impacts would occur.

CEQA Determination. The proposed project would have a beneficial impact on employment and income, and no impact on population and housing income in the region and the project area during construction.

Impact 3.16-6: Potential to Disrupt or Divide the Physical Arrangement of an Established Community Temporarily During Construction

Construction noise, air quality, and traffic impacts are described in Section 3.7, Noise and Vibration; Section 3.6, Air Quality and Global Climate Change; and Section 3.2, Transportation and Circulation, respectively. Project construction would result in some noise, vibration, air quality emissions, and construction-related traffic that could affect peoples' ability to enjoy the outdoor amenities in the Ferry Terminal vicinity during construction. However, as discussed in these sections, the effects would not be significant; and mitigation measures would be implemented to reduce potential construction impacts.

As shown on Figure 2-9, and described in Section 2.4.5, Construction Staging, the majority of construction would be conducted from barges, to limit the amount of Ferry Building area that would be affected by construction activities. Project construction would not block or modify access to the Ferry Building, Ferry Plaza, or businesses in the project area. In addition, signage with directions to the offices and businesses in the project area would be provided, if necessary, to ensure that effects on normal business operations would be minimized. Therefore, disruption to the physical arrangement of the area and community would be minimal. There are no residences in the immediate project area; the nearest residences are approximately 700 feet to the northwest.

NEPA Determination. Construction impacts on established community amenities would not be adverse.

CEQA Determination. Construction impacts on established community amenities would be less than significant.

Cumulative Impacts

Impact 3.16-7. Potential to Result in Cumulative Impacts on Socioeconomics

Construction of the proposed project improvements would temporarily disrupt the project area, affecting circulation and site access. Four other projects listed on Table 3.1-1 would also involve construction in

the project area: the Golden Gate Ferry Terminal Improvement, Bay Area Rapid Transit (BART) Ferry Plaza Physical Barrier Project, America's Cup Project, and Agriculture Building Rehabilitation. Should construction occur simultaneously, cumulative adverse impacts to the community and businesses in the project area could occur. However, construction activities associated with the proposed project and these other projects are unlikely to occur at the same time. The BART Ferry Plaza Physical Barrier Project and America's Cup improvements would be completed prior to initiation of construction of the proposed project. The Agriculture Building Rehabilitation has not been planned in detail yet, and due to the Agriculture Building's location and space constraints on site, rehabilitation of the Agriculture Building could not occur at the same time as the proposed project improvements. The Golden Gate Ferry Terminal Improvements could overlap with the proposed project improvements, but this project would be expected to be small in scale and limited in duration, and would be likely to only affect the Golden Gate Terminal. Therefore is it unlikely that cumulative adverse impacts due to disruption of the project site during construction would occur.

NEPA Determination. The project would not contribute to adverse cumulative impacts to socioeconomic conditions.

CEQA Determination. Cumulative impacts to socioeconomic conditions would be less than significant.

3.16.4 Mitigation Measures

Mitigation measures would not be required for socioeconomic impacts.

3.17 ENVIRONMENTAL JUSTICE

3.17.1 Introduction to the Analysis

In accordance with federal guidelines for environmental justice evaluations and Federal Transit Administration (FTA) guidance, this section evaluates demographic data to determine whether or not minority populations or low-income populations are present in the project vicinity.

In addition to evaluating the potential presence of environmental justice populations in the study area, this section reviews the proposed project and its associated impacts to determine whether the project would result in disproportionately high and adverse health or environmental effects on minority or low-income populations. The analysis determined that there are no minority or low-income populations within ¼ mile of the project site, but that there are minority or low-income populations located between ¼ mile and ½ mile of the project site. Findings from the environmental analysis indicate that minority or low-income populations in the vicinity would not experience disproportionately high and adverse effects from the project.

3.17.2 Affected Environment

Section 3.16 provides information on the demographic characteristics of the population residing in the project vicinity, including current race, ethnicity, and poverty data.

Existing Conditions

To determine whether the project would disproportionately adversely affect a minority or low-income population, the analysis first determined whether a minority or low-income population exists in the study area (within ½ mile of the project area). Section 3.16, Socioeconomics, presents the most recent data available on race, ethnicity, and poverty for the population residing in the vicinity of the project area.

Despite the fact that San Francisco's citywide population is more than 50 percent minority, as a conservative screening measure, census data were reviewed to identify any blocks in the vicinity of the project area with minority populations greater than 50 percent, or areas where the percentage of the population living below the poverty threshold is substantially greater than the citywide poverty rate (using the federal government's official poverty threshold definition, which is based on income, family size, and age). In addition to reviewing the most current census data available, interviews with realtors and property managers were conducted and visual field surveys were completed in an attempt to confirm or better understand census findings, as well as to identify areas where environmental justice populations might exist that may not have been indicated by the census data.

The census data indicate that there are some census blocks within ½ mile of the project area where the majority of residents (>50 percent) are members of racial or ethnic minorities, indicating the potential presence of minority or low-income populations, as defined under current federal agency guidance on environmental justice evaluations.

Census data also indicate that the percentage of population living below the poverty threshold in the vicinity of the project area is well below the citywide poverty rate, which is also below the state and national poverty rates. Field research and interviews with property managers did not result in identification of any low-income population clusters within ¼ mile of the project area.

Two census blocks within ¼ mile of the project area were identified as having greater than 50 percent minority residents. One of these, however, is a public open space with a reported population of one person in 2010. Because homeless persons were not counted in the 2010 census, this could represent a counting error. In any case, one person would not be considered a population or a "community" for the

purpose of environmental justice analysis. The other census block—in which 11 of 21 persons were reported as being minority in 2010—is a strip of townhouses fronting on Jackson Street, west of Drumm Street. These townhomes are not an isolated or separate, cohesive community. Rather, they are an integral part of the luxury housing development referred to as Golden Gateway Apartments and Townhomes. The residential units (both the apartments and townhomes) in this development share the same leasing office, management staff, and amenities (including access to the adjacent tennis and swim club). The residential population of the Golden Gateway complex as a whole does not exceed 50 percent minority, and is therefore not considered a minority population for the purpose of this environmental justice analysis. Similarly, no low-income populations were identified within ¼ mile of the project area, as described in Section 3.16, Socioeconomics.

Several census blocks located more than ¼ mile but less than ½ mile from the project area were identified as housing populations that were more than 50 percent minority and/or low-income populations. Field research and interviews resulted in the identification of a low-income Chinese family housing complex recently completed by the Chinatown Community Development Center, amid luxury condominium developments in the vicinity of Broadway between Battery and Front Streets, as well as several Class A luxury condominium developments in the South of Market area with predominately Asian residents.

Regulatory Framework

Executive Order (EO) 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations" (signed into law on February 11, 1994) requires that each federal agency or its designee take the appropriate and necessary steps to identify and address "disproportionately high and adverse" effects of federal projects on the health or environment of minority and low-income populations to the greatest extent practicable and permitted by law. EO 12898 requires that "each federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies and activities on minority populations and low-income populations" [Subsection 1-101].

In April 1997, the U.S. Department of Transportation (U.S. DOT) issued the Order to Address Environmental Justice in Minority Populations and Low-Income Populations (Order 5610.2). As the U.S. DOT's response to EO 12898, it generally describes the process for incorporating environmental justice principles into U.S. DOT programs, policies, and activities. The objective of the order is to ensure that the interests and well-being of minority and low-income populations are considered and addressed during the decision making process for federally funded transportation projects. In May 2012, the U.S. DOT issued an updated Departmental Order 5610.2(a) (Actions to Address Environmental Justice in Minority Populations and Low-Income Populations). This Order updates the U.S. DOT's original Environmental Justice Order.

In August 2012, the FTA published its Environmental Justice Policy Guidance for Federal Transit Administration Recipients (Circular FTA C 4703.1), to provide further guidance to transit agencies on incorporating environmental justice principles into plans, projects, and activities that receive federal funding from the FTA (FTA, 2012).

3.17.3 Impact Evaluation

This section determines whether environmental impacts associated with the project would be borne disproportionately by minority or low-income populations. Screening to identify minority or low-income populations was conducted consistent with the FTA's Circular FTA C4703.1 (FTA, 2012). For the purpose of this analysis, minority populations were considered to be residential populations comprising 50 percent or more minorities. Low-income populations were considered to be any readily identifiable group of persons who live in geographic proximity, and whose median household income is at or below the citywide poverty rate, as determined using the federal government's official poverty threshold

definition. As identified in Section 3.16, Socioeconomics, several minority populations and one low-income population (which was also a minority population) were identified. These are located between ¼ mile and ½ mile from the project area; specifically, in the vicinity of Broadway between Front and Battery, near the intersection of Main and Harrison streets, and along Harrison Street between First and Fremont streets (refer to the discussion of demographic and poverty data in Section 3.16, Socioeconomics, and Figure 3.16-1).

Direct Impacts

Impact 3.17-1: Potential to Result in Disproportionately High or Adverse Direct Impacts on Minority or Low-Income Populations

No Action Alternative

The No Action Alternative would not involve making improvements to existing facilities at the Downtown San Francisco Ferry Terminal (Ferry Terminal). The only potentially adverse impacts identified for the No Action Alternative would result from the facilities at the Ferry Terminal not being upgraded to Essential Facility Standards, thereby inhibiting the improvement of Water Emergency Transportation Authority (WETA) emergency operations and seismic safety (refer to Impacts 3.12-4 and 3.13-1); and from pedestrian congestion in the project area, which would continue without the project circulation improvements (refer to Impacts 3.3-1 and 3.4-2). However, these impacts would not be borne disproportionately by minority or low-income populations. The circulation impacts would affect any user of the Ferry Terminal area, which is broadly used by Bay Area residents and visitors. Similarly, inhibiting improvement of WETA emergency operations has the potential to affect any worker, visitor, or resident of San Francisco.

Action Alternative

No direct environmental impacts were identified that could not be reduced to less than significant and not adverse with appropriate mitigation measures. Furthermore, none of the direct impacts identified would occur in the areas where minority or low-income populations were identified.

National Environmental Policy Act (NEPA) Determination. The project would not result in direct high and disproportionate adverse impacts to any minority or low-income populations.

California Environmental Quality Act (CEQA) Determination. A CEQA determination is not applicable. This analysis has been prepared to specifically address federal environmental justice analysis requirements.

Indirect Impacts

Impact 3.17-2: Potential to Result in Disproportionately High or Adverse Indirect Impacts on Minority or Low-Income Populations

No Action Alternative

Under the No Action Alternative, all planned new and expanded routes would be accommodated at the existing Ferry Terminal facilities, resulting in more pedestrians using the transportation facilities and public amenities in the project vicinity. This could alter the quality of the experience for transit users and visitors, due to overcrowding of sidewalks and plaza areas, but indirect impacts would not involve any disproportionately high and adverse direct impacts on minority or low-income populations.

Action Alternative

With the exception of Transportation and Circulation Impacts 3.2-2, 3.2-3, and 3.2-8, all indirect environmental impacts would be less than significant and not adverse, or could be reduced to less than significant and not adverse with appropriate mitigation measures. Therefore, for all project impacts except Impacts 3.2-2, 3.2-3, and 3.2-8, the project would not result in high and disproportionate impacts to any minority or low-income populations.

The three potentially adverse and significant indirect impacts identified Section 3.2, Transportation and Circulation, are related to the addition of riders to the Muni F Market and Wharves line in the PM peak hour; and to pedestrian traffic congestion at three crosswalks along The Embarcadero. As described in Section 3.2, mitigation measures have been identified that could reduce some of these impacts. However, because there is uncertainty as to whether fully mitigating these impacts is feasible, these impacts were conservatively considered adverse and significant in this Environmental Impact Statement/Environmental Impact Report. These impacts would affect passengers of the F Market and Wharves, as well as pedestrians along The Embarcadero, both of which are broadly used by Bay Area residents and visitors, and would not disproportionately impact minority or low-income populations in the project area.

NEPA Determination. The project would not result in indirect high and disproportionate adverse impacts to any minority or low-income populations.

CEQA Determination. A CEQA determination is not applicable. This analysis has been prepared to specifically address federal environmental justice analysis requirements.

Construction Impacts

The No Action Alternative would not result in any physical changes to the Ferry Terminal, and no construction activities would be required. Therefore, there would be no high and disproportionate adverse impacts to any minority or low-income populations during construction.

Impact 3.17-3: Potential to Result in Disproportionately High or Adverse Impacts on Minority or Low-Income Populations During Construction

Most of the construction impacts would occur in the immediate project vicinity or adjacent offshore areas, where there is no residential community. Because there are no minority or low-income populations residing in the area where project impacts would be experienced, these impacts would not be borne disproportionately by minority or low-income populations.

NEPA Determination. Project construction would not result in high and disproportionate adverse impacts to any minority or low-income populations.

CEQA Determination. A CEQA determination is not applicable. This analysis has been prepared to specifically address federal environmental justice analysis requirements.

Cumulative Impacts

Because the project would not cause any high and disproportionate adverse impacts to any minority or low-income populations, it would not contribute to cumulative impacts to any minority or low-income populations in the study region.

NEPA Determination. The project would not contribute to cumulative impacts to any minority or low-income populations in the study region.

CEQA Determination. A CEQA determination is not applicable. This analysis has been prepared to specifically address federal environmental justice analysis requirements.

3.17.4 Mitigation Measures

Because no environmental justice impacts were identified, no mitigation measures are recommended.

3.18 REGIONAL GROWTH

3.18.1 Introduction to the Analysis

The proposed project would not result in construction of any new homes or businesses, or removal of any existing constraints to growth. It is in a predominately built-out area on the San Francisco waterfront that currently functions as a ferry terminal, serving existing (and future proposed) commuter water transit services that generally bring residents from other parts of the Bay Area to jobs and commercial facilities in the downtown San Francisco area. Construction would not result in employment demand substantial enough to stimulate population growth, and there would be no substantial permanent increase in employment resulting from the project; therefore, there would be no direct, indirect, or cumulative growth-inducement impacts associated with the project.

3.18.2 Affected Environment

This section describes regional population and employment growth trends and projections for the nine-county San Francisco Bay Area. The nine Bay Area counties are Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, and Sonoma.

Existing Conditions

Population

Table 3.18-1 presents information on population trends and projections in the nine Bay Area counties. The region's population increased by about 8.2 percent, from 6.8 million in 2000 to 7.3 million in 2010. It is expected to increase by an additional 24 percent, to exceed 9.0 million by 2035 (ABAG, 2009b).

Table 3.18-1
Bay Area Population Trends and Projections

Counties	2000	2005	2010	2015	2020	2025	2030	2035
Alameda	1,443,741	1,505,300	1,549,800	1,626,100	1,705,900	1,787,300	1,874,600	1,966,300
Contra Costa	984,816	1,023,400	1,090,300	1,130,700	1,177,400	1,225,500	1,273,700	1,322,900
Marin	247,289	252,600	256,500	260,300	264,000	267,300	270,900	274,300
Napa	124,279	133,700	138,800	142,300	144,600	146,300	147,500	148,800
San Francisco	776,733	795,800	810,000	837,500	867,100	900,500	934,800	969,000
San Mateo	707,163	721,900	733,300	766,900	801,300	832,400	862,800	893,000
Santa Clara	1,682,585	1,763,000	1,822,000	1,945,300	2,063,100	2,185,800	2,310,800	2,431,400
Solano	394,542	421,600	443,100	458,500	472,100	484,600	495,800	506,500
Sonoma	458,614	479,200	497,900	509,900	522,500	535,200	548,400	561,500
Region	**6,783,762**	**7,096,500**	**7,341,700**	**7,677,500**	**8,018,000**	**8,364,900**	**8,719,300**	**9,073,700**

Source: ABAG, 2009b.

Employment

Over the past several decades, the Bay Area economy has been subject to several boom and bust cycles associated with the "dot.com" or Internet bubble, the real estate credit bubble, and nationwide economic recessions. The Bay Area labor force has fluctuated over the past decade, from 3.74 million in 2000, to 3.54 million in 2004-2005, to 3.68 million in 2009. The number of employed residents of the Bay Area

peaked in 2000 at 3.61 million, but declined by 8.4 percent, to 3.31 million in 2009. During the same time period, unemployment rates increased sharply in the region, from around 4 percent in 2000, to 10.1 percent in 2009 (SF Planning, 2010).

Due to the national economic recession, the total number of jobs declined between 2000 and 2010, from 3.7 million to 3.5 million (ABAG, 2009b). Jobs are expected to increase, however, from approximately 3.5 million in 2010 to more than 4.7 million by 2030 (ABAG, 2009b). Over this time period, the Health and Education Services sector is expected to displace Manufacturing and Wholesale as the sector employing the most Bay Area residents.

Regulatory Framework

Federal

The Council on Environmental Quality National Environmental Policy Act (NEPA) regulations define "indirect effects" to include "growth-inducing effects and other effects related to induced changes in the pattern of land use, population density, or growth rate" (40 Code of Federal Regulations 1508,8[b]).

State

The California Environmental Quality Act (CEQA) requires that environmental documents "discuss the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment" (CEQA Guidelines, Section 15126.2[d]).

3.18.3 Impact Evaluation

The project would be considered to have an adverse impact under NEPA, or a significant impact under CEQA, if it is determined that it would induce population growth in the project area or the region. The project could induce growth if the labor requirements could not be filled by the existing regional labor force; if it results in a permanent expansion of the local built environment that increases the capacity for population growth; or if it removes existing constraints to population growth. If it is determined that the project could be growth-inducing, associated impacts on local housing resources would be evaluated.

Direct Impacts

Impact 3.18-1: Potential to Induce Population Growth

No Action Alternative

The No Action Alternative would not involve any improvements to existing facilities at the Downtown San Francisco Ferry Terminal (Ferry Terminal). All planned new and expanded routes would be accommodated at the existing Ferry Terminal facilities. No homes or businesses would be affected, and there would be no demand for labor associated with this alternative. The No Action Alternative would not result in increased population growth, or remove constraints to growth; therefore, it would not be growth-inducing.

Action Alternative

The Programmatic Environmental Impact Report for the Water Emergency Transportation Authority's (WETA's) Implementation and Operations Plan indicated that adding new water transit services could be growth-inducing for areas near new terminals, because new residents could be attracted to terminal areas as a result of perceived quality-of-life improvement, or perceived increased job opportunities afforded by expanded water transit services (WETA, 2003a). Such impacts would be limited, because the new

terminals would be located in areas that are currently developed with urban uses, or planned for future urban development. Such impacts would be addressed when the planning staff of local jurisdictions make land use and zoning decisions for new terminals. In addition, each new specific water transit route would be subject to independent impact analysis. The Ferry Terminal is an existing terminal that serves the needs of existing and new planned commuter water transit services. As such, it is primarily the destination for commuters coming to San Francisco from other Bay Area locations to access jobs or commercial amenities in the city. The Action Alternative would not result in the types of impacts described above from the Programmatic Environmental Impact Report, because it would not generate substantial new demand for travel from San Francisco to other destinations, and because it is located in a waterfront area that is predominately built out. Additional development in the waterfront area would be regulated by the plans and policies described in Section 3.3, Land Use and Land Use Planning.

Project operation would not result in any permanent increase in employment. As described in Section 2.3.6, Operating Elements, no additional employees would be required at the Ferry Terminal. All current and future WETA vessels will be stocked and serviced at other terminal locations. Vessel crews would also board in the outlying terminal locations. Therefore, the project would not cause an in-migration of new workers to San Francisco to fill new jobs.

The project would result in new facilities and amenities at the Ferry Terminal, but it does not include development of any new housing units, nor would it affect any existing constraints to growth and development such as scarcity of buildable land, planning and zoning controls, or availability of sewer or water services. It would improve the efficiency with which planned water transit services and ferry passengers could be accommodated, as well as improving response to emergency planning requirements. The people using the Ferry Terminal facilities on a daily basis are likely to be persons who already live in the region, and would prefer an alternative to commuting by car or by bus, rather than new residents who are attracted to the region because of improvements to the Ferry Terminal facilities. Therefore, project construction and operation would not be considered growth-inducing.

NEPA Determination. Project operation would not have adverse impacts related to regional growth.

CEQA Determination. The proposed project would have less-than-significant direct impacts to regional growth.

Indirect Impacts

No Action Alternative

The No Action Alternative would maintain existing Ferry Terminal gate configuration and circulation areas. No new gates would be constructed. There would be no circulation and public space improvements, and boarding improvements to respond to emergency planning requirements would not be made, but all programmed improvements identified in the Regional Transportation Plan would be implemented. Because the No Action Alternative would have no direct impacts on regional growth, it would cause no indirect impacts to regional growth.

Action Alternative

Some indirect and induced economic effects would occur as a result of the project, but such impacts would be negligible in the context of the regional economy. The project would not result in employment demand substantial enough to stimulate population growth; therefore, there would be no indirect growth-inducement impacts associated with the project.

Construction Impacts

The No Action Alternative would not result in any physical changes to the Ferry Terminal, and no construction activities would be required. Therefore, there would be no construction impacts to regional growth.

Impact 3.18-2: Potential for Construction to Induce Population Growth

The proposed project would involve a relatively small construction workforce (described in Section 2.4.7), and the Bay Area has a relatively large resident labor force, with the skills and availability to meet all of the projected construction workforce needs. Project construction would not induce substantial population growth, because construction jobs would be filled by the existing, relatively large, and diversified labor force available in the Bay Area, thereby avoiding substantial relocation to fill temporary construction positions.

NEPA Determination. The proposed project would not have adverse impacts to regional growth due to construction.

CEQA Determination. The proposed project would have less-than-significant impacts to regional growth due to construction.

Cumulative Impacts

Impact 3.18-3: Potential to Result in Cumulative Impacts on Regional Growth

The proposed Ferry Terminal improvements would not contribute to cumulative growth-inducement impacts, because the project itself would not be growth-inducing. Because the project does not include any new home construction, it would not contribute to the expansion of existing housing resources, or the associated incremental increase in population. Because the project would serve the needs of the existing regional population, rather than stimulate regional population growth, it would not contribute to cumulative growth-inducement effects of other projects.

NEPA Determination. The project would not contribute to adverse cumulative regional growth impacts.

CEQA Determination. The project would not contribute to cumulative regional growth impacts.

3.18.4 Mitigation Measures

No growth inducement impacts were identified; therefore, no mitigation measures are recommended.

CHAPTER 4 OTHER CEQA/NEPA CONSIDERATIONS

4.1 ENVIRONMENTALLY PREFERABLE/SUPERIOR ALTERNATIVE

The National Environmental Policy Act (NEPA) requires that "the alternative or alternatives which were considered to be environmentally preferable be identified. Environmentally preferable is defined as the alternative that will promote the national environmental policy expressed in Section 101 of the National Policy Act, meaning the alternative that causes the least damage to the biological and physical environment. In addition, it also means the alternative that best protects, preserves, and enhances historic, cultural and natural resources" (CEQ, 1981). Although Council on Environmental Quality regulations require the identification of the environmentally preferred alternative, it is not required that this alternative be adopted.

The national environmental policy expressed in Section 101 of NEPA includes the following goals:

- Fulfill the responsibilities of each generation as trustee of the environment for succeeding generations;
- Ensure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings;
- Attain the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended consequences;
- Preserve important historic, cultural, and natural aspects of our national heritage; and maintain, wherever possible, an environment that supports diversity and variety of individual choice;
- Achieve a balance between population and resource use that will permit high standards of living and a wide sharing of life's amenities; and
- Enhance the quality of renewable resources, and approach the maximum attainable recycling of depletable resources (NEPA, Section 101[b]).

The California Environmental Quality Act (CEQA) does not provide specific direction regarding the methodology of comparing alternatives and the proposed project. Each project must be evaluated for the issues and impacts that are most important; this will vary depending on the project type and the environmental setting.

The CEQA Guidelines (Section 15126.6[e][2]) state that "If the environmentally superior alternative is the "No Project" alternative, the Environmental Impact Report (EIR) shall also identify an environmentally superior alternative among the other alternatives."

Under the No Action Alternative, there would be no implementation of facility improvements at the Downtown San Francisco Ferry Terminal (Ferry Terminal). Therefore, only a small increase in water transit service (i.e., only service that could be accommodated at the existing two gates that the Water Emergency Transportation Authority (WETA) has access to) could be safely accommodated at the Ferry Terminal over the long term. In addition, in the event of an emergency, WETA vessels deployed for evacuation purposes would be required to use the existing two gates at the Ferry Terminal available to WETA (Gates B and E). Existing Ferry Terminal and San Francisco Ferry Building (Ferry Building) areas would be used for staging of evacuees (e.g., areas along The Embarcadero or the Ferry Plaza), which are not built to Essential Facilities standards.[1] If areas of the Ferry Terminal not built to Essential Facilities standards fail, or otherwise cannot be safely accessed, passengers would need to be staged

[1] As defined by the California Building Code 2010 and the International Building Code 2009, Essential Facilities are buildings and other structures that are intended to remain operational in the event of extreme environmental loading from flood, wind, snow, or earthquakes.

elsewhere, and alternative access to vessels would need to be provided, potentially hindering evacuation activities.

The Action Alternative would accommodate the full expansion of water transit service outlined in WETA's Implementation and Operations Plan for the San Francisco Bay Area, by constructing three new gates, overwater berthing facilities, and supportive landslide improvements (such as additional passenger waiting and queuing areas, and circulation improvements). In addition, improvements constructed under the Action Alternative would all be constructed to Essential Facilities standards, to ensure that the improved circulation areas (e.g., the new Embarcadero Plaza) would be available for emergency operations and evacuee queuing, if necessary.

Although the No Action Alternative would not result in any physical impacts to the environment, it would not meet the purpose and need of the project; and over the long term, it would not improve alternative transportation and emergency operations in the Bay Area. The No Action Alternative would not accommodate the projected increases in transbay water transit trips that would help alleviate congestion over the Bay Bridge and through the Bay Area Rapid Transit Transbay Tube. Furthermore, the No Action Alternative would not address WETA and the Port of San Francisco's emergency operation needs. In addition, the No Action Alternative would be inconsistent with several of the plans and policies adopted for the Ferry Terminal area that encourage an expansion in water transit services, and improvements to public access and open space. Therefore, the No Action Alternative would not be considered an environmentally preferred/superior alternative over the long term.

The Action Alternative would meet the purpose and need of the project. The only significant, unavoidable, and adverse impacts that would result from implementation of the Action Alternative, in the short or long term, would be transportation and circulation impacts, as described in Section 3.2. All other impacts identified for the Action Alternative would be negligible, less than significant and not adverse, or less than significant and not adverse with the implementation of mitigation measures. As described in Section 2.7 of this document, other alternatives to the project have been previously evaluated. However, these alternatives were found not to meet the project purpose and need, to not be feasible, to not be consistent with other plans, or to exceed projected funding. A majority of the adverse impacts that would result from the Action Alternative would be temporary construction impacts, which would be outweighed by the long-term benefits of project implementation. The Action Alternative best meets the goals listed in NEPA Section 101 because it facilitates beneficial use of the environment through water transit service, without degradation or other undesirable consequences. Furthermore, it preserves important historic aspects of our national heritage and achieves a balance between population and resource use, permitting a wide sharing of San Francisco Bay as an amenity (through expanded use of the Ferry Terminal), and reducing the use of depletable resources.

Therefore, the Action Alternative, as designed and with incorporation of the recommended mitigations, is considered to be the environmentally preferable/superior alternative.

4.2 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

Under 40 Code of Federal Regulations (CFR) 1502.16, NEPA requires that an Environmental Impact Statement (EIS) describe the irreversible and irretrievable resource commitments related to the use of nonrenewable resources that could result from the implementation of the proposed project. Irreversible effects would primarily result from the use or destruction of a specific resource, such as energy and minerals that could not be replaced within a reasonable time frame. Irretrievable resource commitments would involve the loss in value of an affected resource that could not be restored as a result of the action; an example of this is the extinction of a threatened or endangered species, or the disturbance of a cultural resource. The proposed project would require the commitment of resources; primarily, the use of nonrenewable resources such as fossil fuels, water, labor, and electricity, for project construction and operation.

Construction activities would require the use of fossil fuels for the operation of vehicles and equipment. Construction of the project would also require a commitment of a variety of other nonrenewable or slowly renewable natural resources, such as construction materials. Use of raw building materials for construction would be an irretrievable commitment of resources from which these materials are produced. Commitment of labor and fiscal resources for construction and operation is considered irretrievable. However, project operation may be a zero-net energy project. It would incorporate green building approaches to the design of the new facilities, and potentially include photovoltaic cells into the canopies at Gates A, B, E, F, and G. The project's minor, incremental, increased use of these resources, however, would not significantly increase the overall commitment of resources associated with water transit operation in the Bay Area, or development within San Francisco. The project would involve only minor, incremental use of nonrenewable resources, and would not prevent sustainable development.

An irreversible loss of special-status species could occur, should the project result in incidental take of federally listed fish species. The proposed project may result in a potential incidental take of federally listed salmonids if dredging must be extended outside of the work window. In addition, the proposed project may result in potential incidental take of green sturgeon and longfin smelt, regardless of when dredging is conducted. However, measures have been identified in Section 3.9 that would minimize impacts to these species; therefore, an irretrievable loss of these species' populations is not expected.

4.3 SIGNIFICANT UNAVOIDABLE IMPACTS

Under 40 CFR 1502.16, NEPA requires that an EIS include a description of any significant unavoidable impacts for which no mitigation, or only partial mitigation, is feasible.

Section 15126(b) of the CEQA Guidelines requires that an EIR "describe any significant impact, including those which can be mitigated, but not reduced to a level of insignificance. Where there are impacts that cannot be alleviated without imposing an alternative design, their implications and the reasons why the project is being proposed, notwithstanding their effect, should be described."

Three potentially adverse and significant indirect impacts are identified Section 3.2, Transportation and Circulation, related to the addition of riders to the Muni F Market and Wharves line in the PM peak hour, and to pedestrian traffic congestion at three crosswalks along The Embarcadero. These impacts are summarized below:

- **Impact 3.2-2: Potential Impacts to Transit in Existing Conditions.** Under Existing Conditions, the project's addition of riders to the Muni F Market and Wharves in the PM peak hour would result in this transit line operating under overcrowded conditions.

- **Impact 3.2-3: Potential Impacts to Pedestrian Facilities in Existing Conditions.** Increases in pedestrian circulation associated with the project under Existing Conditions would result in substantial overcrowding for three study area crosswalks.

- **Impact 3.2-8: Potential Cumulative Impacts to Pedestrian Facilities in Future (2035) Conditions.** Increases in pedestrian circulation associated with the project under Future (2035) Plus Project conditions would result in substantial overcrowding for three study area crosswalks.

As described in Section 3.2, mitigation measures have been identified that could reduce some of these impacts. However, because there is uncertainty as to whether fully mitigating these impacts is feasible, these impacts were conservatively considered adverse and significant in this EIS/EIR.

4.4 RELATIONSHIP BETWEEN LOCAL SHORT-TERM USES OF THE ENVIRONMENT AND LONG-TERM PRODUCTIVITY

Under 40 CFR 1502.16, NEPA requires that an EIS consider the relationship between local short-term uses of the environment, and the maintenance and enhancement of long-term productivity.

Implementing the Downtown San Francisco Ferry Terminal Expansion Project (project) would result in short-term construction-related impacts on water quality, biological resources, and air quality. In addition, the proposed project would include short-term construction-related impacts from noise, vibration, and construction traffic.

Additional short-term adverse impacts include the potential for an increase in turbidity, suspended solids, and sedimentation during construction; the potential for accidental spills or seepage of hazardous materials during construction; and fish entrapment or mortality from in-water construction.

However, these potential adverse effects would be minimized by implementing the mitigation measures discussed in Chapter 3 for construction-related impacts. Moreover, these short-term impacts are expected to be outweighed by long-term beneficial effects of the proposed terminal improvements to accommodate WETA's expanded services and emergency operation capabilities in the Bay Area.

The project would result in a net increase of 345 square feet (0.008 acre) of permanent fill in San Francisco Bay. The placement of piles would be in the existing Ferry Terminal area, which has a number of structures already in place, and is considered a somewhat disturbed environment relative to other open-water portions of central San Francisco Bay. This small loss of benthic habitat would be considered negligible in this environment. In addition, the new structures would be placed within the existing Ferry Terminal area, where a number of overwater structures already exist. The increased area of shade that would result from the project is small relative to the size of the surrounding open waters of San Francisco Bay, and the impact on phytoplankton production and the food chain is expected to be negligible.

Therefore, the project would not be expected to impact the long-term productivity of the environment.

CHAPTER 5 PUBLIC AND AGENCY INVOLVEMENT

Since late 2010, several types of public and agency participation have occurred as a part of the project design and the environmental review process, pursuant to the requirements of the National Environmental Policy Act (NEPA), the California Environmental Quality Act (CEQA), and 23 United States Code (USC) 139. Among other requirements, 23 USC 139 mandates that the federal lead agency establish a plan for coordinating public and agency participation in, and comment on, the environmental review process for a project or category of projects. Stakeholders and public agencies, including those with permitting authority for the project, have been engaged as indicated below.

From October through December 2010, prior to the initiation of the environmental review process, a series of stakeholder interviews was conducted by the Water Emergency Transportation Authority (WETA) and the design team. The purpose of this early outreach was to inform stakeholders about the project, and obtain input relevant to the development of the preliminary project design.

Initiating the environmental review process, WETA and the Federal Transit Administration (FTA) conducted a public and agency scoping process. The details of the scoping activities and comments received are provided in the Scoping Summary Report, included as Appendix A, and summarized below. As required by CEQA for the preparation of an Environmental Impact Report (EIR), WETA submitted a Notice of Preparation and the accompanying Notice of Completion to the California State Clearinghouse on March 24, 2011. The purpose of these notices was to alert potentially interested parties of the project, and invite participation in the environmental review process, including public scoping. A condensed scoping meeting notice, providing a brief project description, the dates for the public comment period and scoping meetings, and a project site diagram indicating the location of the planned scoping meetings, was also published in the *San Francisco Examiner* on March 31, 2011. In addition, project information was provided to the publisher of *Bay Crossings*, who published a major article about the project in April 2011, in both the printed and online editions of this periodical.

Pursuant to NEPA, the FTA published its Notice of Intent to Prepare an Environmental Impact Statement (EIS) for the Downtown San Francisco Ferry Terminal Expansion Project (project) in the Federal Register on April 7, 2011. The Notice of Intent described the project purpose and need, location and environmental setting, project alternatives, possible effects, and FTA procedures. The purpose of this notice was also to alert potentially interested parties of the project, and invite participation in the environmental review process, including public scoping.

In April 2011, copies of the scoping notice were mailed to approximately 500 interested parties, which included owners and residents within 500 feet of the project area, Port of San Francisco (Port) tenants, community organizations, public agencies and representatives, as well as a list of interested parties developed in coordination with WETA and the Port. Scoping meetings were held on April 26, 2011, at Pier 1, The Embarcadero, San Francisco, California. Approximately a dozen members of the public and one agency staff representative attended the public and agency scoping meeting. Comments were received at the meeting and throughout the scoping period, which ended on May 16, 2011.

WETA and FTA received three phone calls, three e-mail messages, and six letters during the scoping period. Four of the correspondents were property owners, property managers, or tenants with real estate interests in the project vicinity. Seven correspondents were public resource agencies. Copies of electronic and printed mail correspondence received during the scoping period are included in the Scoping Summary Report in Appendix A. In addition, another letter was received in February 2012. All comments received, which are summarized in Table 5-1, were considered in the preparation of the EIS/EIR.

Table 5-1
Summary of Comments Received

Resource Area	Agency Comments	Public Comments
Aesthetics		• Avoid obstruction of views. • Identify maintenance measures to prevent bird droppings from accumulating on passenger protection and other raised structures. • Evaluate effects of passenger queuing and proposed canopies on restaurant views.
Air Quality	• Identify impacts of increased passenger water transit service on air quality through reductions in vehicular traffic. • Consider project relationship to Bay Area's classification as nonattainment for ozone and fine particulate matter. • Examine localized air quality impacts from increased water transit service. • Identify ways to reduce emissions of diesel particulate matter. • Identify means for controlling fugitive dust and emissions from mobile and stationary sources during construction, including administrative controls. • Consider the use of best available control technology, including add-on controls for construction equipment. • Identify cumulative impacts from multiple construction projects.	• Dust may be created during construction; identify means to prevent dust from coating windows or entering open windows and air vents. • Identify impacts of idling vessels on café areas. • Identify impacts of construction on indoor air quality. • Analyze the impact of construction on local air quality and heating, venting, and air conditioning systems in the project vicinity.
Alternatives	• Consider project alternatives that would avoid or minimize impacts to natural resources.	Consider an alternative that activates the Ferry Plaza, defines public access and pedestrian routes, restores Pier ½ for parking, fills the "lagoon," and creates a waterfront promenade (e.g., between Gate B and Pier 1).
Biological Resources	• Identify sensitive species in the project vicinity, and potential impacts to those species, including the potential to introduce invasive species. • Identify impacts on wildlife species and habitat from dredging, filling, pile driving and other project activities. • Identify impacts on wildlife from potential exposure to hazardous materials mobilized as a result of the project.	
Cultural Resources	• Consider the possible presence of submerged cultural resources in the project vicinity, including historic wharves or shipwrecks.	

Table 5-1
Summary of Comments Received (Continued)

Resource Area	Agency Comments	Public Comments
Economic Impacts		• Consider the potential loss of retail sales due to loss of views or outdoor seating. • Identify impacts on back plaza farmer's market during construction. • Keep majority of construction on barges to limit construction encroachment on the Ferry Plaza. • Address floating debris resulting from construction.
Energy and Green Design	Consider LEED strategies in the project design, as well as other green infrastructure options for onsite stormwater management.	• Consider installing solar panels over berthing areas to power night time and emergency lighting. • Identify location for a backup generator.
Environmental Justice	• Identify how the proposed project would affect low-income and minority populations in the surrounding area.	
Flood Protection and Climate Change	• Analyze effects of proposed fill with regard to flood protection and storm surges, including consideration of future sea-level rise in the project vicinity due to climate change, and potential adaptive management strategies. • Discuss project potential to alter flood flow. • Include a greenhouse gas emissions analysis.	
Geology/Soils	• Analyze construction impacts to slope and stability of Bay Mud, and operational effects from potential scouring; and mitigate to maintain stability. • Identify risks associated with disturbing sediments that may contain hazardous materials.	• Evaluate effects of construction activities on subsidence of piers supporting the historic San Francisco Ferry Building (Ferry Building) or Ferry Plaza platform.
Land Use	• Consider other property interests in the project area in the analysis. • Assess the projects' consistency with the Public Trust Doctrine.	
Noise and Vibration	• Consider vibration impacts on existing platforms, BART facilities, and seawall; and noise impacts on sensitive species.	• Evaluate effects of pile installation on noise and vibration. Identify mitigation measures to reduce impact inside adjacent buildings.

Table 5-1
Summary of Comments Received (Continued)

Resource Area	Agency Comments	Public Comments
Pedestrian Circulation	• Identify impacts of increased water transit service on pedestrian traffic around the Ferry Building and Embarcadero crossings, including impacts on the fire lane and driveway at the south end of the Ferry Building. • Identify impacts of the project on BART's emergency passenger evacuation route, and on access to BART's facilities.	• Consider signage to guide passengers to ferries, and patrons to Ferry Building businesses, during construction. • Evaluate adequacy of planned expansion of rear promenade area to accommodate passenger queuing, and to remove queuing from congested Embarcadero sidewalk areas. • Ensure compliance with ADA standards for egress/ingress. • Include pedestrians and delivery vehicles in the circulation analysis.
Recreation	• Describe short-term and long-term project impacts to recreation, including boating and fishing, as well as project measures to provide maximum feasible free public access to San Francisco Bay.	
Transit Service Impacts	• Identify impacts on facilities, ridership demand, station area congestion, and travel times for Muni lines and BART service. Identify transfer agreements that would facilitate passenger transfers among transit providers.	
Traffic and Parking	• Consider additional vehicle use of the Ferry Plaza, and changes in circulation patterns, during construction and operation. • Identify impacts of increased passenger service on parking for taxis and passenger parking. Avoidance of double parking on The Embarcadero.	• Consider how to accommodate emergency vehicles and personnel (ambulance, fire, and police) in the circulation impact analysis.
Wake/Wave Activity		• Examine how increase in water transit activity could affect pilings that support the Ferry Building. • Consider the effect of tides, currents, wind, storm conditions, and other vessel traffic (both commercial and noncommercial—e.g., kayaks and boats) as part of the navigation and safety impact analysis.

Table 5-1
Summary of Comments Received (Continued)

Resource Area	Agency Comments	Public Comments
Water Quality/ Water Surface Area and Volume	• Identify ways to minimize surface water contamination from runoff or worksite spills or litter. • Identify impacts from dredging and fill on turbidity and sedimentation. • Quantify impacts (e.g., identify acres of water impacted). • In compliance with the Clean Water Act, demonstrate that impacts to waters of the United States have been avoided or minimized. • Analyze how proposed project-related filling would affect total surface area and volume of water in San Francisco Bay.	
Water Vessel Circulation	• Evaluate impacts on water vessel traffic and vessel circulation patterns (including water-based access to BART facilities for maintenance activities).	
Other	• Evaluate consistency with the San Francisco Bay Plan, including policies related to public access, transportation, fish, other aquatic organisms and wildlife, water surface area and volume, water quality, safety of fills and sea level rise, and public trust. • Consider earthquake safety and security in the project area. • Consider other proposed projects, including BART's safety and security projects, in the project's cumulative impact evaluation. • Identify adequate and feasible mitigation measures for significant impacts or cumulatively considerable impacts.	• Evaluate effects of rodent or pest issues during construction. • Consider need for additional restroom, storage, and bicycle storage facilities associated with the project. • Consider the weight-bearing capacity of the back plaza in an emergency situation (emergency vehicles and many people present). • Consider all project impacts, as defined by CEQA, avoiding "piecemealing" or project segmentation.

Notes:
ADA = Americans with Disabilities Act
BART = Bay Area Rapid Transit
CEQA = California Environmental Quality Act
LEED = Leadership in Energy and Environmental Design
Muni = San Francisco Municipal Railway

Pursuant to 23 USC 139, federal, state, and local agencies that have jurisdiction over resources that could be affected by the project, or that have technical expertise on an issue relevant to the proposed project were formally invited to participate in the environmental review process as either cooperating or participating agencies in the NEPA process. Table 5-2 lists those agencies that accepted invitations to participate in the NEPA process for the project. The National Marine Fisheries Service accepted FTA's request to serve as a cooperating agency pursuant to NEPA, and requested participation in the development of the EIS/EIR as it relates to the assessment of potential impacts and conservation measures for Endangered Species Act-listed fish species under the jurisdiction of National Marine Fisheries Service, and Essential Fish Habitat under the Magnuson Stevens Fishery Conservation and Management Act.

Table 5-2
List of Cooperating and Participating Agencies in the NEPA Process

Agency	Type of Agency	Type of Participation	Jurisdiction/Interest
National Oceanographic and Atmospheric Administration – National Marine Fisheries Service	Federal	Cooperating	Biological and marine resources
U.S. Army Corps of Engineers	Federal	Participating	Wetlands and waters of the U.S.
U.S. Coast Guard, San Francisco Sector	Federal	Participating	Marine navigation and safety
U.S. Environmental Protection Agency	Federal	Participating	Ecosystems, air quality, and global climate change
U.S. Fish and Wildlife Service	Federal	Participating	Biological resources
California State Lands Commission	State	Participating	Submerged lands
San Francisco Bay Conservation and Development Commission	Regional	Participating	Bay shoreline land uses and public access
Bay Area Air Quality Management District	Regional	Participating	Air quality
Port of San Francisco	Local	Participating	Land owner
San Francisco Bay Area Rapid Transit District	Local	Participating	Transportation, access

Notes:
NEPA = National Environmental Policy Act

Additionally, the Port accepted WETA's request to serve as a responsible agency under CEQA.

An agency coordination meeting was held on December 8, 2011. Attendees included representatives from WETA, FTA, the U.S. Army Corps of Engineers, the National Oceanographic and Atmospheric Administration, the U.S. Environmental Protection Agency, the Port, the San Francisco Bay Conservation and Development Commission, Bay Area Rapid Transit, the State Lands Commission, and the U.S. Coast Guard. This meeting was held to provide agencies with an opportunity for meaningful participation in the environmental review process; to comment on the Draft Coordination Plan; and to discuss the purpose and need and project alternatives. A summary of this meeting and meeting notes are provided in Appendix D. Agency consultation and coordination is ongoing, as described in the Coordination Plan.

Native American Consultation

Pursuant to the revised implementing regulations of the National Historic Preservation Act, found at Title 36 Code of Federal Regulations Part 800.4(a)(4), URS Corporation, on behalf of FTA and WETA, contacted the California Native American Heritage Commission (NAHC) on March 10, 2011, to request a review of its Sacred Lands Files, and to receive a list of the individuals and groups that the NAHC believes should be contacted regarding information or concerns related to the project areas. A review of the Sacred Lands Files by the staff of the NAHC failed to identify Native American cultural resources within the immediate project area. The NAHC provided a list of groups and individuals who could have an interest in the project area. Native American groups and individuals identified by the NAHC were sent a copy of the Notice of Preparation

and scoping notice during the EIS/EIR scoping process. No responses have been received from the Native American community concerning cultural resources within the Archeological Area of Potential Effects (APE).

National Historic Preservation Act Section 106 Consultation

Pursuant to Section 106 of the National Historic Preservation Act, FTA initiated consultation with the State Historic Preservation Officer (SHPO) on June 4, 2012, regarding the delineation of the APE for archaeological and historical architectural resources. The SHPO concurred with the FTA delineation of the APE on September 13, 2012. On February 14, 2013, the FTA submitted to the SHPO a finding of no effect on archaeological resources, and a finding of no adverse effect on historic architectural resources. On April 15, 2013, the SHPO concurred with FTA's finding of no adverse effect for the proposed project (refer to Appendix D).

Endangered Species Act Section 7 and Magnuson-Stevens Fishery Conservation and Management Act Consultation

Pursuant to Section 7 of the federal Endangered Species Act—and, for Essential Fish Habitat, to the Magnuson-Stevens Fishery Conservation and Management Act—the FTA has initiated consultation with the National Marine Fisheries Service regarding potential impacts to species and protected habitat under its jurisdiction that are protected under these Acts. FTA initiated consultation with submittal of a Biological Assessment (refer to Appendix D). Refer to Section 3.9, Biological Resources, for additional information. The consultation process will be completed prior to the release of the Final EIS/EIR, which will contain a summary of the consultation process.

CHAPTER 6 LIST OF PREPARERS

Name	Role
San Francisco Bay Area Water Emergency Transportation Authority	
Mike Gougherty	Project Manager/Senior Planner
Nina Rannells	Executive Director
Kevin Connolly	Manager, Planning and Development
John Sindzinski	Manager, Planning and Development
Federal Transit Administration	
Ray Sukys	Director of Planning and Program Development
Alexander Smith	Community Planner
Mary Nguyen	Environmental Protection Specialist
Adam Klein	Environmental Protection Specialist (Contractor, Resource Management Concepts, Inc.)
Port of San Francisco	
Carol Bach	Assistant Deputy Director, Environmental Health and Safety
James Hurley	Real Estate Analyst
Mark Paez	Cultural and Historic Resources Specialist
Jonathan Stern	Assistant Deputy Director, Waterfront Development
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Rima Ghannam	Other California Environmental Quality Act/National Environmental Policy Act Considerations
Megan Giglini	Air Quality and Global Climate Change
Mark Hale	Archaeology and Paleontology
Leigh Hammel	Geology, Soils, and Seismicity
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Name	Role
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Derek McCulloch	Technical Editing
Linda Peters	Section 4(f) and 6(f) Resources, Aesthetics and Visual Resources
Ray Rice	Geology, Soils, and Seismicity
Tim Rimpo	Air Quality and Global Climate Change
Nicole Rucker	Biological Resources
Susumu Shirayama	Noise and Vibration
Alissa Stillman	Public and Agency Involvement
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Julie Bixby Environmental Consulting	
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Mara Feeney	Public Involvement, Socioeconomics, Environmental Justice, Regional Growth
DKS Associates	
Bill Loudon	Transportation and Circulation
Joshua Pilachowski	Transportation and Circulation
Paul Stanis	Transportation and Circulation
JRP Historical Consulting	
Meta Bunse	Historic Architectural Resources
Bryan Larson	Historic Architectural Resources
BASELINE Environmental Consulting	
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APPENDIX A

SCOPING SUMMARY REPORT

San Francisco Bay Area Water Emergency Transportation Authority
Federal Transit Administration

Downtown San Francisco Ferry Terminal Expansion Project

SCOPING SUMMARY REPORT

Revision December 2011

Prepared by:

URS Corporation

Mara Feeney & Associates

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LIST OF ACRONYMS AND ABBREVIATIONS

BART	Bay Area Rapid Transit
CEQA	California Environmental Protection Act
EIS/EIR	Environmental Impact Statement/Environmental Impact Report
FTA	Federal Transit Administration
NOAA	National Oceanic and Atmospheric Administration
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NOC	Notice of Completion
NOI	Notice of Intent
NOP	Notice of Preparation
Port	Port of San Francisco
WETA	Water Emergency Transportation Authority

1.0 INTRODUCTION AND PURPOSE

The purpose of this report is to summarize the actions taken and results achieved during the scoping process conducted to support the environmental analysis for the San Francisco Bay Area Water Emergency Transportation Authority's (WETA's) Downtown San Francisco Ferry Terminal Expansion Project. WETA is the local lead agency for this proposed project, and the Federal Transit Administration (FTA) is the federal lead agency. The agencies determined that an Environmental Impact Statement/ Environmental Impact Report (EIS/EIR) would be jointly prepared to meet the requirements of both the federal National Environmental Policy Act (NEPA) and the California Environmental Protection Act (CEQA).

The agencies performed a series of joint and separate actions to inform interested parties and members of the public about the proposed project and to encourage comments on the scope of the planned environmental analysis. The purpose of scoping is to solicit input from the public and agencies on the appropriate scope, focus, and content of the environmental analysis. WETA and the FTA will consider all of the input received during the scoping process in the preparation of the Draft EIS/EIR. The Draft EIS/EIR will describe the existing environmental conditions of the area that could be affected by the proposed project and evaluate the potential effects of the proposed project in accordance with CEQA and NEPA. The comments provided by the public and agencies during scoping will help WETA and FTA to identify pertinent issues, methods of analyses, and level of detail that should be addressed in the Draft EIS/EIR. The scoping comments will also provide the basis for developing a reasonable range of feasible alternatives that will be evaluated in the Draft EIS/EIR. In addition to facilitating public and regulatory agency input on the scope and focus of the Draft EIS/EIR, scoping allows the lead agencies to explain the environmental review process to the public, and to identify additional opportunities for public comment and public involvement during the environmental review process.

Scoping activities were conducted during the spring of 2011. Information and outreach activities for the project included publishing required notices through the California State Clearinghouse and in the Federal Register, sending consultation letters to potentially interested resource agencies, publishing a scoping notice in a local newspaper, mailing the notice to area residents and other interested parties, holding a formal public comment period, conducting Scoping Meetings, and other measures that are described and documented in this report.

Section 2 contains a brief overview of the project. Section 3 contains information about the CEQA Notice of Preparation (NOP). Section 4 contains information about the NEPA Notice of Intent (NOI) to Prepare an EIS. Section 5 describes measures that were taken to invite resource agency participation in the scoping process. Section 6 describes public outreach activities. Section 7 describes the scoping meetings that took place on April 26, 2011, and Section 8 summarizes scoping comments that were received outside of the scoping meetings. Report appendices include copies of the NOP and NOI, proof of publication of the scoping notice, scoping meeting transcripts, and correspondence and comments received.

2.0 PROJECT OVERVIEW

WETA is proposing expansion and improvements to the Downtown San Francisco Ferry Terminal at the Port of San Francisco (Port) Ferry Building (see Figure 1). The project would expand the number of ferry gates, improve pedestrian circulation and ferry patron boarding, and enhance emergency response capabilities to evacuate people from San Francisco in the event of a major catastrophic event.

The project has the following objectives:

- Accommodate WETA's projected increase in water transit ridership and related vessel arrivals and departures from the Downtown San Francisco Ferry Terminal;
  - Provide a viable alternative mode of transportation that accommodates projected increases in transbay trips, and helps alleviate congestion over the Bay Bridge and through the San Francisco Bay Area Rapid Transit (BART) Transbay Tube;
- Address WETA and the Port of San Francisco's (Port) emergency operation needs;
  - Establish a circulation plan and improved signage that provides clear pedestrian routes for ferry to bus and ferry to rail transfers, as well as safe routes for bikes, emergency vehicles, and delivery trucks to enter, park and exit the area;
  - Provide necessary landside improvements, such as designated weather-protected areas for waiting and queuing, ticket machines and fare collection equipment, improved lighting, and improved boarding and arrival/departure information to serve water transit passengers and to enhance the Downtown San Francisco Ferry Terminal as the central hub for water transit services on San Francisco Bay; and
- Enhance the area's public access and open space with design features that create attractive, safe daytime and nighttime public spaces for both water transit passengers and other users of the Ferry Building area.

The planned improvements build on improvements that were completed by the Port in 2003 (referred to as Phase I of the Ferry Terminal Expansion Project). The first phase of this project (referred to as Phase II), which would begin in 2014 and be completed by 2017, would consist of demolition of Pier ½ and Pier 2, construction of three new ferry gates, installation of amenities such as weather-protected areas for queuing, improvements to pedestrian circulation, and filling of the lagoon for future use as a staging area for evacuees in the event of a major catastrophe. Full build out (Phase III) of the proposed improvements is contingent on potential ridership demand at full build out of the proposed Treasure Island redevelopment, expected to occur sometime between 2020 and 2030.

Figures 1 and 2 illustrate current conditions and proposed improvements.

Figure 1 – Project Area

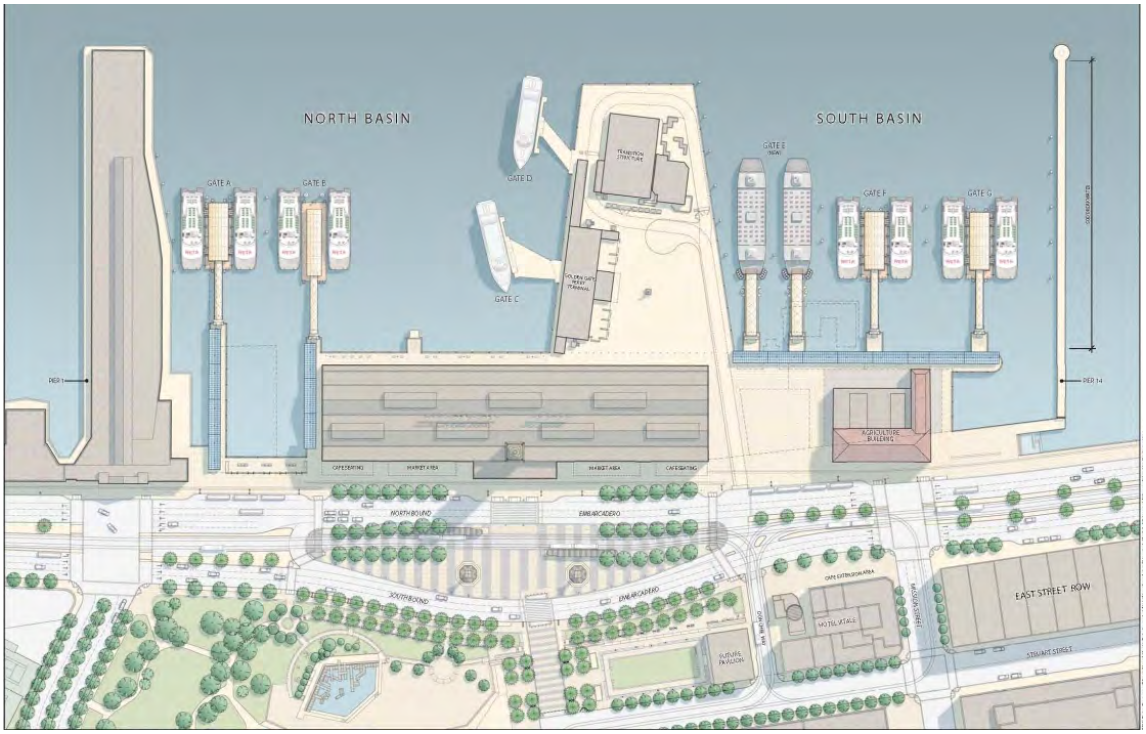

Figure 2 – Preliminary Sketch of Phase III Proposed Improvements

3.0 NOTICE OF PREPARATION, NOTICE OF COMPLETION

WETA submitted a NOP and the accompanying NOC to the State Clearinghouse on March 24, 2011. These documents are required as part of the CEQA process, to notify potentially interested parties of the project and the pending environmental analysis. The State Clearinghouse posts available documents on their website and also distributes the NOP to state agencies as requested by WETA and noted on the NOC. The NOP provides a brief description of the proposed project, identifies some of the environmental issues to be analyzed in the review process, announces dates for the public comment period and scoping meetings, and identifies project contacts for additional information.

Copies of the NOP and NOC are contained in Appendix A, along with documentation of their posting on the State Clearinghouse website.

4.0 NOTICE OF INTENT

The FTA published its NOI to prepare an EIS for the Downtown San Francisco Ferry Terminal Expansion Project pursuant to NEPA in the Federal Register on April 7, 2011. The NOI describes the project purpose and need, location and environmental setting, project alternatives, possible effects, and FTA procedures.

Appendix B contains a copy of the NOI that appeared in the Federal Register.

5.0 AGENCY OUTREACH

The FTA sent a series of letters to federal, state, and local resource agencies to invite their participation in the environmental review process for the Downtown San Francisco Ferry Terminal Expansion Project. Section 6002 of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users establishes an enhanced environmental review process for certain FTA projects, increasing the transparency of the process, as well as the opportunities for participation. The requirements of Section 6002 apply to this project. As part of the environmental review process for this project, the lead agencies must identify, as early as practicable, any other federal and nonfederal agencies that may have an interest in the project, and invite such agencies to become participating agencies in the environmental review process. Nine letters were mailed on April 7, 2011, and an additional six letters were mailed to agency staff on April 18, 2011. Representatives of the following agencies were invited to participate in the scoping and environmental review process for this project:

- California Department of Fish and Game
- National Oceanic and Atmospheric Administration (NOAA)
- U.S. Army Corps of Engineers
- San Francisco Bay Conservation and Development Commission
- U.S. Coast Guard, San Francisco Sector
- U.S. Environmental Protection Agency, Community and Ecosystems Division
- The Port of San Francisco
- Bay Area Air Quality Management District
- Regional Water Quality Control Board
- U.S. Fish and Wildlife Service
- California State Lands Commission

All of the letters sent to resource agency staff included a copy of a scoping meeting notice (see Appendix C) and the NOI that was published in the Federal Register (Appendix B). Federal agencies were asked explicitly to reply, even if they chose not to participate in the environmental review process for this project. Nonfederal agencies were asked to reply only if they were requesting to become a participating agency.

Copies of the agency staff outreach letters are included in Appendix D.

WETA and FTA will follow up with each of the agencies described above and confirm the agency's role in the environmental review process under both CEQA and NEPA. All agency roles and responsibilities in the environmental review process will be defined and documented in a coordination plan for the project, which will be developed separately.

6.0 PUBLIC OUTREACH

6.1 PROJECT MAILING LIST

A project mailing list was developed so that the scoping notice could be mailed to property owners, residents, or tenants in the vicinity of the project area, as well as other interested parties. The Port cooperated with WETA by providing a preliminary mailing list database containing the names of local government and agency staff, committee members, and members of the public who had expressed recent interest in other Port planning projects in the vicinity of the Ferry Building. FTA and WETA staff and consultants reviewed this preliminary list and added names of other potentially interested parties, based on their knowledge of the project vicinity and stakeholders who had previously participated in earlier planning stages of the project. Direct Mail Center was contracted to prepare a list of all property owners and residents, tenants, or occupants within a 300-foot radius of the project site. Direct Mail Center mailed copies of the scoping notice to all parties on the final project mailing list, which included names and addresses for approximately 500 interested parties.

6.2 NEWSPAPER NOTICE

A condensed scoping meeting notice, providing a brief project description, dates for the public comment period and scoping meetings, and a project site diagram indicating the location of the planned scoping meetings, was published in the *San Francisco Examiner* on March 31, 2011. A copy of the proof of publication is included in Appendix C.

6.3 FACT SHEET

WETA prepared a fact sheet to provide project information to interested parties and the public. Copies of the fact sheet were made available upon request, and were also distributed to ferry commuters via the kiosk in the Bay Crossings retail store in the Ferry Building, as well as in the Port's public lobby at Pier 1, adjacent to the Ferry Building. A copy of the fact sheet was provided to Ferry Building tenants through their property management representative. In addition, a copy of the fact sheet was provided to Clipper kiosk staff in the Embarcadero train station, with a request that they ask management to consider making it available to Clipper card purchasers, The fact sheet was also posted online, with a link provided in the scoping notice and on WETA's and the Port's websites. A copy of the fact sheet is included as Appendix E.

6.4 BAY CROSSINGS ARTICLE

Bay Crossings is a monthly publication of news and features of particular interest to commuters who patronize ferries on San Francisco Bay routes. Project information was provided to the publisher, who published a major article about the project in April 2011, in both the printed and online editions of this periodical. Appendix F contains the text and photos of this article.

6.5 OTHER

Both WETA and the Port uploaded information about the Downtown San Francisco Ferry Terminal Expansion Project on their websites, with links for more information. In addition, a special slide about the project was created to display on the flat screen monitor in the public lobby area of the Port's offices at Pier 1, where a series of slides presenting information of interest to visitors is displayed sequentially on any given day (see items in Appendix G).

7.0 SCOPING MEETINGS

Scoping meetings were held on April 26, 2011, in the Bayside Conference Rooms at Pier 1, The Embarcadero, San Francisco, California. An interagency scoping meeting was scheduled from 2:00 p.m. to 4:00 p.m. at this location, and a public scoping meeting was scheduled from 5:30 p.m. to 7:30 p.m. at the same location.

Aside from WETA staff and consultants, only one agency staff representative attended the afternoon interagency scoping meeting. Approximately a dozen members of the public attended the evening scoping meeting. The sign-in sheet from the public scoping meeting is included as Appendix H. Full transcripts of both meetings are contained in Appendix I. The paragraphs below present a brief summary of questions raised and comments made at these two meetings.

7.1 AGENCY SCOPING MEETING

The agency scoping meeting opened at 2:00 p.m. Parties present included the following:

John Sindzinski, Manager, Planning and Development, WETA
Mike Gougherty, Project Manager, WETA
Chad Mason, Planner/Analyst, WETA
James Hurley, Planner, Port of San Francisco
Boris Dramov, President, ROMA Design Group
Ian Austin, URS Corporation
Julie Bixby, URS Corporation
Mara Feeney, Mara Feeney & Associates
Cherie Lubash, Court Reporter, Jan Brown & Associates
Joshua Widmann, Associate Planner, Golden Gate Bridge and Transportation District

The meeting began with introductions and a presentation by John Sindzinski about the purpose of the meeting, the CEQA/NEPA processes, WETA and FTA roles, and a discussion of the scoping process. Mike Gougherty then presented a summary of project goals and objectives, and project purpose and need. He explained the proposed project in the context of other projects that are currently in progress or planned along the San Francisco waterfront. He reviewed the project schedule and a list of anticipated environmental issues to be addressed in the environmental analysis. He then asked if there were any questions or comments about the presentation.

Mr. Widmann asked a number of clarification questions pertaining to the various phases of the project timeline. He asked if the environmental document would discuss transportation issues such as ferry trips per day and ridership projections. He asked how much ridership was expected to increase in the future, and he asked that impacts on bicycle parking be considered in the environmental analysis. The agency scoping meeting was adjourned at 2:35 p.m.

A separate meeting was held on May 4, 2011 at the NOAA National Marine Fisheries Service (NMFS) offices in Santa Rosa because a NMFS representative was not able to attend the Agency Scoping meeting held in San Francisco on April 26, 2011. Parties Present included the following:

Korie Schaeffer, Marine Biologist, NOAA NMFS
Mike Gougherty, Project Manager, WETA
Chad Mason, Planner/Analyst, WETA
Bill Martin, URS Corporation
Ian Austin, URS Corporation

Mike Gougherty provided an overview of the proposed Downtown Ferry Terminal Expansion Project as described in the project Fact Sheet. Korie Schaeffer made the following comments: NMFS will need details of the square footage of new bay cover associated with the project (e.g., piers, ramps, and floats), of Bay fill removed (e.g.; Pier ½ and Pier 2) and of Bay covered (e.g., the BART construction hole). This information will be needed for both Phase 2 and Phase 3 build-out. Also NMFS requested that the environmental document consider potential impacts on Essential Fish Habitat and Endangered Species Act species that NMFS' regulatory authority requires it to assess including the following issues: underwater sound, overwater shading, dredging, and marine mammals.

7.2 PUBLIC SCOPING MEETING

The public scoping meeting began at 5:30 p.m. in an Open House format, allowing members of the public time to review display boards and aerial photographs that had been set up around the room. By 5:41 p.m., a small crowd of people had gathered to look at the display boards and seemed eager to hear the presentation. WETA staff then opened the meeting with presentations similar to those that had been made at the afternoon agency scoping meeting. Mike Gougherty invited questions about the presentation materials before opening the meeting for public comments. There were several clarification questions on the proposed project, about subjects such the ferry services that would be using particular future gates or berths, and Golden Gate Ferry Service's planned upgrades to their facilities.

Scoping comments made by members of the public requested that WETA and FTA:

- include pedestrians and delivery vehicles in the circulation analysis;
- consider how pile driving will affect shaking in surrounding buildings and plaza;
- consider the weight-bearing capacity of the back plaza in an emergency situation (emergency vehicles and many people present);
- consider how to accommodate emergency vehicles and personnel (ambulance, fire, police) in the circulation impact analysis;
- analyze the impact of construction on local air quality and heating, venting, and air conditioning systems in the project vicinity;
- consider noise impacts (e.g., pile driving) on adjacent offices and apartment buildings;
- consider the effect of tides, currents, wind, storm conditions, and other vessel traffic (both commercial and noncommercial—e.g., kayaks and boats) as part of the navigation and safety impact analysis.

The meeting ended at 6:30 p.m. Photos 1 through 4 were taken during the public scoping meeting.

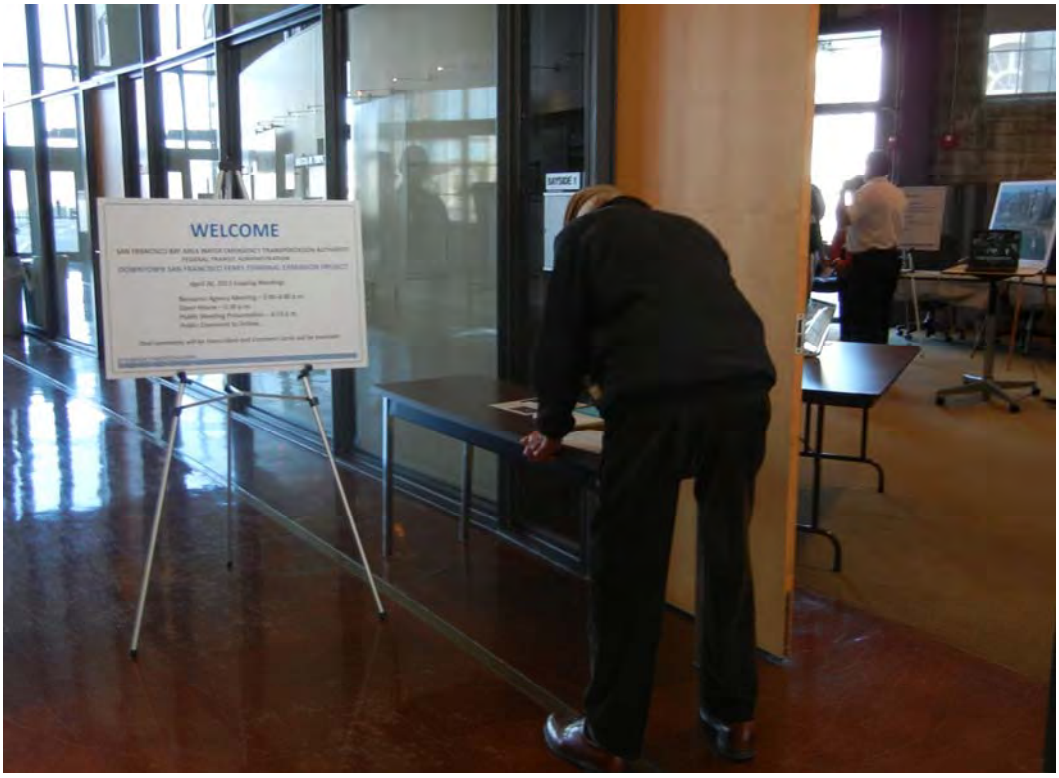

Photo 1 – Welcome Board and Sign-In Table

Photo 2 – Reviewing Project Information during Open House

Photo 3 – Presentation of Project Information

Photo 4 – Presentation of Project Information

8.0 OTHER SCOPING COMMENTS SUBMITTED

WETA and FTA received three phone calls, three e-mail messages, and six letters during the scoping period. Four of the correspondents were property owners, property managers, or tenants with real estate interests in the project vicinity. Seven correspondents were public resource agencies. Copies of electronic and printed mail correspondence are included in Appendix J.

WETA received two phone calls pertaining to the project on April 13, 2011. One phone call was a request for a copy of the scoping notice, and the other was a request that aesthetic and visual impacts from project improvements be considered in the environmental analysis. WETA also received one phone call from ACOE who did not have any specific scoping comments at the time.

One e-mail message was from the National Park Service's Pacific West Region, stating that they had no comment on the project.

The other two e-mail messages were from Ferry Building property management (May 16) and a major Ferry Building tenant (May 13). Their concerns are summarized below:

- **Air Quality.** Dust may be created during construction; identify means to prevent dust from coating windows or entering open windows and air vents. Identify impacts of idling ferries on café areas. Identify impacts of construction on indoor air quality.

- **Geology/Soils.** Evaluate effects of construction activities on subsidence of piers supporting historic Ferry Building.

- **Noise and Vibration.** Evaluate effects of pile installation on noise and vibration. Identify mitigation measures to reduce impact inside adjacent buildings.

- **Pedestrian Traffic**. Consider signage to guide passengers to ferries, and patrons to Ferry Building businesses during construction. Evaluate adequacy of planned expansion of rear plaza area to accommodate passenger queuing, and to remove queuing from congested Embarcadero sidewalk areas. Ensure compliance with ADA standards for egress/ingress.

- **Aesthetics.** Avoid obstruction of views. Identify maintenance measures to prevent bird droppings from accumulating on passenger protection and other raised structures. Evaluate effects of passenger queuing on restaurant views.

- **Energy.** Consider installing solar panels over berthing areas to power night time and emergency lighting (and/or identify location for a backup generator for this purpose).

- **Economic Impacts.** Consider potential loss of retail sales due to loss of views or outdoor seating. Identify impacts on back plaza farmer's market during construction. Address floating debris resulting from construction. Reimburse fees associated with hiring engineers, if needed, to review plans or monitor noise, vibration, or movement at the Ferry Building

- **Wake/Wave Activity.** Examine how increase in ferry activity could affect pilings that support the Ferry Building.

- **Other.** Evaluate effects of rodent or pest issues during construction. Consider need for additional restroom, storage, and bicycle storage facilities associated with the project.

Six letters were received from the NMFS (April 20), the San Francisco Municipal Transportation Agency (May 9), the California State Lands Commission (May 13), BART (May 16), the U.S. Environmental Protection Agency (May 16) and the San Francisco Bay Conservation and Development Commission

(May 18). Resource agencies were generally supportive of project goals of reducing vehicle trips and increasing transit use. Specific comments related to the scope of the environmental analysis included the following:

- **Alternatives.** Consider project alternatives that would avoid or minimize impacts to natural resources.

- **Geology and Soils.** Analyze construction impacts to slope and stability of Bay Mud. Mitigate to maintain stability. Identify risks associated with disturbing sediments that may contain hazardous materials.

- **Biological Resources.** Identify sensitive species in the project vicinity and potential impacts to those species, including potential to introduce invasive species. Identify impacts on wildlife species and habitat from dredging, filling, and other project activities. Identify impacts on wildlife from potential exposure to hazardous materials mobilized as a result of the project.

- **Water Quality.** Identify ways to minimize surface water contamination from runoff or worksite spills or litter. Identify impacts from dredging and fill on turbidity and sedimentation. Quantify impacts (e.g., identify acres of water impacted). In compliance with the Clean Water Act, demonstrate that impacts to waters of the United States have been avoided or minimized.

- **Water Surface Area and Volume.** Analyze how proposed project-related filling will affect total surface area and volume of water in San Francisco Bay.

- **Impacts on Other Transit Services.** Identify impacts on facilities, ridership demand, station area congestion, and travel times for MUNI lines and BART service. Identify transfer agreements that will facilitate passenger transfers among transit providers.

- **Air Quality.** Identify impacts of increased passenger ferry service on air quality through reductions in vehicular traffic. Consider project relationship to Bay Area's classification as nonattainment for ozone and fine particulate matter. Examine localized air quality impacts from increased ferry service. Identify ways to reduce emissions of diesel particulate matter. Identify means for controlling fugitive dust and emissions from stationary sources during construction. Identify cumulative impacts from multiple construction projects.

- **Noise and Vibration.** Consider vibration impacts on existing platforms, BART facilities, and seawall, and noise impacts on sensitive species.

- **Traffic and Parking.** Consider additional vehicle use of ferry plaza and changes in circulation patterns during construction and operation. Identify impacts of increased passenger service on parking for taxis and passenger parking. Avoidance of double parking on the Embarcadero.

- **Pedestrian Circulation.** Identify impacts of increased ferry service on pedestrian traffic around Ferry Building and Embarcadero crossings, including impacts on the fire lane and driveway at the south end of the Ferry Building. Identify impacts of the project on BART's emergency passenger evacuation route.

- **Water Vessel Circulation.** Evaluate impacts on water vessel traffic and vessel circulation patterns (including water-based access to BART facilities for maintenance activities).

- **Recreation.** Describe short-term and long-term project impacts to recreation, including boating and fishing, as well as project measures to provide maximum feasible free public access to the Bay.

- **Cultural Resources.** Consider possible presence of submerged cultural resources in the project vicinity, including historic wharves or shipwrecks.

- **Environmental Justice.** Identify how the proposed project will affect low income and minority populations in the surrounding area.

- **Flood Protection and Climate Change.** Analyze effects of proposed fill with regard to flood protection and storm surges, including consideration of future sea level rise in the project vicinity due to climate change. Include a greenhouse gas emissions analysis.

- **Other.** Evaluate consistency with the San Francisco Bay Plan. Consider earthquake safety and security in the project area. Identify adequate and feasible mitigation measures for significant impacts or cumulatively considerable impacts.

The NMFS accepted FTA's request to serve as a cooperating agency pursuant to NEPA, and requested participation in the development of the EIS/EIR as it relates to the assessment of potential impacts and conservation measures for Endangered Species Act-listed fish species under the jurisdiction of NMFS and essential fish habitat under the Magnuson Stevens Fishery Conservation and Management Act.

APPENDIX A
NOTICE OF PREPARATION/ NOTICE OF COMPLETION

WATER EMERGENCY TRANSPORTATION AUTHORITY

WETA

Notice of Preparation

To: State Clearinghouse
1400 Tenth Street
Sacramento, CA 95814

From: Mike Gougherty
WETA Project Manager
Pier 9, Suite 111, The Embarcadero
San Francisco, CA 94111

Subject: Notice of Preparation of a Draft Environmental Impact Report and Notice of Public Scoping Meeting

The San Francisco Bay Water Emergency Transportation Authority (WETA), as the lead state agency, and the Federal Transit Administration (FTA), as the lead federal agency, are planning to prepare an Environmental Impact Report (EIR) for the Downtown San Francisco Ferry Terminal Expansion Project, under the California Environmental Policy Act In addition, WETA will hold both a public and agency scoping meeting on April 26, 2011. WETA is requesting your agency's comments on the scope and content of the environmental information which is germane to your agency's statutory responsibilities regarding the proposed project. Your agency will need to use the EIR prepared by our agency when considering your permit or other approval for the project.

The project description, location, and the potential environmental effects are described in the attached materials.

Due to the time limits mandated by State law, your response must be sent at the earliest possible date, but not later than 45 days after receipt of this notice.

Please send your response to Mike Gougherty at the address shown above, along with the name for a contact person in your agency.

Project Title: Downtown San Francisco Ferry Terminal Expansion Project
Project Applicant, if any: San Francisco Bay Water Emergency Transportation Authority

Date: 3/24/2011 Signature: [signature]
Title: Project Manager
Telephone: (415) 364-3189

COMMENTS AND SCOPING MEETING

A public scoping meeting to accept comments on the scope of the Environment Impact Report (EIR) will be held on the following date:

- April 26, 2011, from 5:30 p.m. to 7:30 p.m., at Pier 1, Bayside Conference Room, San Francisco, California.

An interagency scoping meeting for agencies with interest in the project will be held on the following date:

- April 26, 2011 from 2:00 p.m. to 4:00 p.m. at the Pier 1, Bayside Conference Room, San Francisco, California.

The meeting will be accessible to persons with disabilities. If special translation or signing services or other special accommodations are needed, please contact Mike Gougherty at (415) 364-3189 at least 48 hours before the meeting. A scoping information packet is available on the WETA website at http://www.watertransit.org, or by calling Mike Gougherty at (415) 364-3189. Copies will also be available at the scoping meeting.

Comments on the scope of the EIS will be accepted at the public scoping meeting, or written comments should be sent to Mike Gougherty, WETA Project Manager, San Francisco Bay Water Emergency Transportation Authority, Pier 9, Suite 111, The Embarcadero, San Francisco, CA, 94111. Comments will be accepted until May 16, 2011.

PROJECT DESCRIPTION

Project Location

The project is located in the northeastern section of San Francisco, California, at the San Francisco Ferry Building, situated at the foot of Market Street. The study area encompasses Port of San Francisco property between Pier 1 on the north and Pier 14 on the south, and includes the Ferry Building, ferry gates, and the Ferry Plaza.

Project Purpose and Need

The purpose of the Downtown San Francisco Ferry Terminal Expansion Project is to support and expand ferry service on San Francisco Bay, as established by WETA in its Implementation and Operations Plan, and in accordance with city and regional policies to encourage transit use. Furthermore, the project will address deficiencies in the transportation network that impede ferry

operation and ferry patron access and circulation at the Downtown San Francisco Ferry Terminal. The project objectives include:

- Accommodate WETA's projected increase in ferry ridership and related ferry arrivals and departures from the Downtown San Francisco Ferry Terminal;
- Provide a viable alternative mode of transportation that accommodates projected increases in transbay trips, and helps alleviates congestion over the Bay Bridge and through the Bay Area Rapid Transit (BART) Transbay Tube;
- Address WETA's and the Port of San Francisco's (Port) emergency response needs;
- Establish a circulation plan and improved signage that provides clear pedestrian routes for ferry to bus and ferry to rail transfers, as well as safe routes for bikes, emergency vehicles, and delivery trucks to enter, park and exit the area;
- Provide necessary landside improvements, such as designated weather-protected areas for waiting and queuing, ticket machines and fare collection equipment, improved lighting, and improved boarding and arrival/departure information to serve ferry patrons and to enhance the Ferry Building as the central point of embarkation for ferries on San Francisco Bay; and
- Enhance the area's public access and open space with design features that create attractive, safe daytime and nighttime public spaces for both ferry patrons and other users of the Ferry Building area.

WETA recognizes and supports the Port's land use planning and development proposals in and around the Ferry Building, including the historic renovation of the Agricultural Building and other improvements in the Ferry Building area. These Port initiatives are being planned and funded independent of the WETA project and, as a result, are not included as project elements. WETA will stage construction, and manage and operate ferry services so they do not preclude, conflict with, or inhibit the Port's proposed development plans in the project vicinity.

Proposed Project Components

The proposed project incorporates modifications and improvements to the Ferry Terminal gates and ferry boarding areas to accommodate future WETA service and increased ferry patronage. The current estimate for 2025 projected daily ridership at the Ferry Terminal is approximately 35,000 passengers. The ridership projections account for existing service, plus new ferry services from downtown San Francisco to Berkeley, Treasure Island, Hercules, Richmond, Redwood City, Martinez, and Antioch to be initiated between 2014 and 2030. Service frequencies during the day and evenings would reflect the travel demand for commute and non-

commute periods. Existing ferry services operated by others (i.e., ferry service to Sausalito, Larkspur, and Tiburon), and existing services operated by WETA (i.e., ferry service to Vallejo, Alameda/Oakland, and Alameda Harbor Bay) would continue to operate, but the access and boarding environments for these services would be improved by the project.

In addition, landside improvements to allow staging and circulation for possible emergency evacuation at the Ferry Building are included in the proposed project. The modifications and improvements are the responsibility of WETA in cooperation with the Port of San Francisco, with funding coming from Regional Measure 2, State Proposition 1B, and FTA.

The WETA-sponsored improvements represent sequential construction phases (Phase 2 and Phase 3). The Phase 2 and Phase 3 improvements build on those elements already completed by the Port in 2003 during Phase 1. Phase 2, which is expected to be completed by 2017, will include:

- Demolition and removal of Pier ½ and Pier 2;
- Construction of Gate A in the north basin, and Gates F and G in the south basin;
- Installation of boarding area amenities such as weather-protected areas for queuing, ticket machines and fare collection equipment, improved lighting, and ferry boarding and arrival/departure information signs;
- Widening of ferry access pathways along existing pedestrian promenades, and separation of ferry patron queuing from other pedestrian and vehicular movements where possible;
- Improved wayfinding signage in the vicinity of the Ferry Building, which will indicate ferry boarding areas and transit connections; and
- Filling in the lagoon to prepare for and accommodate staging and circulation of evacuees following a catastrophic event.

As new ferry gates are constructed, existing ferry services would relocate to the new gates. Pier demolition and construction activities would be staged and sequenced to allow for the continuity of existing ferry services during construction. Demolition of Pier ½ would precede construction of Gate A. Similarly, demolition of Pier 2 would precede construction of Gate F. Gate G, which is designated for ferry services not expected to operate until 2020 or later, would serve as a vessel layover location, temporary storage area, and emergency boarding location in the interim. WETA's capital improvement plan synchronizes the purchase or leasing of vessels to meet future service and emergency response requirements.

Phase 3 is contingent on the implementation of the Treasure Island Redevelopment Plan. At full build-out, expected to occur sometime between 2020 and 2030, new commercial, recreational, and residential facilities on Treasure Island would require additional ferry capacity to serve substantial numbers of visitors and residents. The additional capacity would be provided by larger, bow-loading vessels purchased by the Treasure Island developer, and operated by WETA. The bow-loading vessels would necessitate the redesign of Gate E to accommodate the larger ferries.

Possible Impacts

The purpose of this EIR process is to study, in a public setting, the potentially significant effects of the proposed project on the environment. Primary areas of investigation for this project include, but are not limited to: land use, development potential, displacements, historic resources, visual and aesthetic qualities, air quality, noise and vibration, dredging and bay fill requirements, hazardous materials resulting from demolition and construction activities, traffic circulation and transportation linkages, pedestrian circulation, safety, security, and emergency response, bay habitat, and cumulative impacts. The environmental analysis may reveal that the proposed project will not impact or have significant impacts to many of those areas. However, if any environmental impacts are identified, measures to avoid, minimize, or mitigate those impacts will be proposed.

Notice of Completion & Environmental Document Transmittal

Mail to: State Clearinghouse, P.O. Box 3044, Sacramento, CA 95812-3044 (916) 445-0613
For Hand Delivery/Street Address: 1400 Tenth Street, Sacramento, CA 95814

SCH #

Project Title: Downtown San Francisco Ferry Terminal Expansion Project

Lead Agency: SF Bay Area Water Emergency Trans. Authority (WETA) Contact Person: Mike Gougherty

Mailing Address: Pier 9, Suite 111, The Embarcadero Phone: 415-364-3189

City: San Francisco Zip: 94111 County: San Francisco

Project Location: County: San Francisco City/Nearest Community: San Francisco

Cross Streets: The Embarcadero and Market Street Zip Code: 94111

Longitude/Latitude (degrees, minutes and seconds): 37 ° 47 ' 23 " N / 122 ° 23 ' 37.3 " W Total Acres: 28

Assessor's Parcel No.: 9900002, 9900200, 9900201, 9900274, 9900274H 9900275, 9900278 Section: 34 & 03 Twp.: 1.0S & 2.0S Range: 5.0 and 5.0 Base: Mount Diablo

Within 2 Miles: State Hwy #: 101 and 280 Waterways: San Francisco Bay

Airports: Railways: Caltrain/Muni/BART/Amtrak Schools: Youth Chance High School

Document Type:

CEQA: ☑ NOP ☐ Draft EIR NEPA: ☐ NOI Other: ☐ Joint Document
☐ Early Cons ☐ Supplement/Subsequent EIR ☐ EA ☐ Final Document
☐ Neg Dec (Prior SCH No.) ☐ Draft EIS ☐ Other:
☐ Mit Neg Dec Other: Public Scoping Meeting ☐ FONSI

Local Action Type:

☐ General Plan Update ☐ Specific Plan ☐ Rezone ☐ Annexation
☐ General Plan Amendment ☐ Master Plan ☐ Prezone ☑ Redevelopment
☐ General Plan Element ☐ Planned Unit Development ☐ Use Permit ☐ Coastal Permit
☐ Community Plan ☐ Site Plan ☐ Land Division (Subdivision, etc.) ☐ Other:

Development Type:

☐ Residential: Units Acres
☐ Office: Sq.ft. Acres Employees ☑ Transportation: Type Ferry Terminal Expansion
☐ Commercial: Sq.ft. Acres Employees ☐ Mining: Mineral
☐ Industrial: Sq.ft. Acres Employees ☐ Power: Type MW
☐ Educational: ☐ Waste Treatment: Type MGD
☐ Recreational: ☐ Hazardous Waste: Type
☐ Water Facilities: Type MGD ☐ Other:

Project Issues Discussed in Document:

☑ Aesthetic/Visual ☐ Fiscal ☑ Recreation/Parks ☑ Vegetation
☐ Agricultural Land ☑ Flood Plain/Flooding ☐ Schools/Universities ☑ Water Quality
☑ Air Quality ☑ Forest Land/Fire Hazard ☑ Septic Systems ☐ Water Supply/Groundwater
☑ Archeological/Historical ☑ Geologic/Seismic ☐ Sewer Capacity ☑ Wetland/Riparian
☑ Biological Resources ☑ Minerals ☑ Soil Erosion/Compaction/Grading ☑ Growth Inducement
☑ Coastal Zone ☑ Noise ☑ Solid Waste ☑ Land Use
☐ Drainage/Absorption ☑ Population/Housing Balance ☑ Toxic/Hazardous ☑ Cumulative Effects
☑ Economic/Jobs ☑ Public Services/Facilities ☑ Traffic/Circulation ☐ Other:

Present Land Use/Zoning/General Plan Designation:

Local Retail, Visitor & Specialty Retail, Office, R&D, Warehouse, Light Industry, and Ferry Excursion

Project Description: *(please use a separate page if necessary)*

The proposed project would serve commuters, visitors, and recreational users desiring an alternative way to cross San Francisco Bay, and reach nearby employment, entertainment, and recreational destinations in San Francisco. The project expands the number of ferry gates and improves ferry patron circulation, boarding, and wayfinding in and around the Ferry Building. In addition, the project enhances emergency response capabilities to evacuate people from San Francisco and/or mobilize first responders to San Francisco via ferries if a catastrophic event occurs. More detailed information is provided in the attached NOP and project description.

Note: The State Clearinghouse will assign identification numbers for all new projects. If a SCH number already exists for a project (e.g. Notice of Preparation or previous draft document) please fill in.

Reviewing Agencies Checklist

Lead Agencies may recommend State Clearinghouse distribution by marking agencies below with and "X".
If you have already sent your document to the agency please denote that with an "S".

x	Air Resources Board	x	Office of Emergency Services
x	Boating & Waterways, Department of	x	Office of Historic Preservation
	California Highway Patrol		Office of Public School Construction
S	Caltrans District # 4	x	Parks & Recreation, Department of
	Caltrans Division of Aeronautics		Pesticide Regulation, Department of
S	Caltrans Planning	x	Public Utilities Commission
	Central Valley Flood Protection Board	S	Regional WQCB # 2
	Coachella Valley Mtns. Conservancy	x	Resources Agency
	Coastal Commission	x	S.F. Bay Conservation & Development Comm.
	Colorado River Board		San Gabriel & Lower L.A. Rivers & Mtns. Conservancy
x	Conservation, Department of		San Joaquin River Conservancy
	Corrections, Department of		Santa Monica Mtns. Conservancy
	Delta Protection Commission	x	State Lands Commission
	Education, Department of		SWRCB: Clean Water Grants
	Energy Commission		SWRCB: Water Quality
S	Fish & Game Region # 3		SWRCB: Water Rights
	Food & Agriculture, Department of		Tahoe Regional Planning Agency
	Forestry and Fire Protection, Department of	x	Toxic Substances Control, Department of
	General Services, Department of	x	Water Resources, Department of
	Health Services, Department of		
	Housing & Community Development		Other:
	Integrated Waste Management Board		Other:
x	Native American Heritage Commission		

Local Public Review Period (to be filled in by lead agency)

Starting Date April 1, 2011 Ending Date May 16, 2011

Lead Agency (Complete if applicable):

Consulting Firm: URS Corporation
Address: One Montgomery, Suite 900
City/State/Zip: San Francisco, CA 94104-4538
Contact: Ian Austin
Phone: 415-896-5858

Applicant: Water Emergency Trans. Authority (WETA)
Address: Pier 9, Suite 111, The Embarcadero
City/State/Zip: San Francisco, CA 94111
Phone: 415-291-3377

Signature of Lead Agency Representative: _____ **Date:** 3/24/2011

Authority cited: Section 21083, Public Resources Code. Reference: Section 21161, Public Resources Code.

APPENDIX B
NOTICE OF INTENT

responsibility for the incidents on the acts or omissions of any person or entity.

Two railroad employees, while each riding the side of rolling equipment to protect a shoving movement, were fatally injured (in separate incidents) when the equipment they were riding struck other equipment that was left out to foul. A common factor in both accidents was that the equipment was left in a location where it fouled an adjacent track by the very employees who were involved in the incidents.

The first incident occurred on September 2, 2010, in Bridgeport, New Jersey, when a conventional two-person switching crew was shoving rolling equipment into an industrial facility. The locomotive engineer was in the locomotive control compartment and the conductor was positioned on the leading end of a tank car directing the shoving move. The conductor had one foot on the end platform and the other on the side ladder tread as he began to pass a tank car that he had spotted at that location the previous day. Unfortunately, the car had been left in the foul of the adjacent track and the cars struck each other; the conductor sustained fatal injuries.

The second incident occurred on February 8, 2011, in Kankakee, Illinois. A conventional switching crew that consisted of a conductor, engineer, and a conductor-in-training was switching cars on a switching lead track and using various other yard tracks. The crew had left a car on one of the yard tracks in a location where it was in the foul of an adjacent track. Shortly thereafter, the conductor and conductor-in-training boarded opposite sides of the leading end of a gondola car and began a shoving movement. Subsequently, the side of the gondola on which the conductor was riding struck the car that was previously left in the foul of the adjacent track. The conductor was crushed between the two cars and sustained fatal injuries.

Although the preponderance of incidents involving equipment that is left in the foul of an adjacent track fortunately only result in railroad property damage, the potential for injury or death in such instances is always present. By issuing this safety advisory, FRA is reminding all stakeholders of the importance of situational awareness and compliance with all applicable operating and safety rules, particularly those related to leaving rolling equipment in a location that is clear of adjacent tracks.

FRA Action: Despite the significant reduction in train accidents caused by equipment being left in the foul of an adjacent track, a review of FRA's inspection data relative to 49 CFR 218.101 indicates a disturbing trend. From calendar year (CY) 2009 to CY 2010, violations of 49 CFR 218.101 recommended for prosecution by FRA inspectors increased 124 percent. Based on the results of inspection data for the first 2 months of 2011, if trends continue, violations recommended for prosecution in 2011 versus 2010 would increase by an additional 81 percent. Whether the increase in violations is due to greater vigilance by FRA or is due to an actual increase in the number of instances where equipment is being left in such locations, FRA intends to ensure that railroads take necessary steps to prevent and reduce the potential trend indicated by the statistics noted above.

Over the next several months, FRA intends to increase its inspection activity to focus on compliance with railroad operating rules that address all of the requirements contained in Subpart F. Particular emphasis will be placed on the requirements contained in 49 CFR 218.101. FRA will also focus its inspection efforts on railroad operational testing activity, particularly as it relates to Subpart F. FRA strongly encourages railroad industry members to reemphasize the importance of leaving equipment in the clear as frequently as possible, and to take such other actions as may help ensure safety on the Nation's railroads.

Recommended Railroad Action: In light of the recent accidents discussed above, and in an effort to maintain the safety of railroad employees on the Nation's rail system, FRA recommends that railroads:

(1) Review with employees the circumstances of the two most recent fatal incidents;

(2) Reinstruct supervisors and employees on the operating and safety rules applicable to leaving rolling equipment in a location that is clear of adjacent tracks. Particular emphasis should be placed on the procedures that enable employees to identify clearance points and the means to identify locations where clearance points will not permit a person to safely ride on the side of a car;

(3) Increase operational testing on those operating and safety rules that pertain to leaving rolling equipment in a location that is clear of adjacent tracks; and

(4) Review current job briefing procedures among coworkers and determine if the procedures are sufficient to encourage more effective communication regarding switching activities, specifically as the procedures relate to the positioning of rolling equipment so that the equipment is in a location that is clear of adjacent tracks.

FRA encourages railroad industry members to take action that is consistent with the preceding recommendations and to take other actions to help ensure the safety of the Nation's railroad employees. FRA may modify this Safety Advisory 2011–01, issue additional safety advisories, or take other appropriate action necessary to ensure the highest level of safety on the Nation's railroads, including pursing other corrective measures under its rail safety authority.

Issued in Washington, DC, on April 1, 2011.

Jo Strang,

Associate Administrator for Railroad Safety/ Chief Safety Officer.

[FR Doc. 2011–8232 Filed 4–6–11; 8:45 am]

BILLING CODE 4910–06–P

DEPARTMENT OF TRANSPORTATION

Federal Transit Administration

Intent To Prepare an Environmental Impact Statement for the Downtown San Francisco Ferry Terminal Expansion Project in the City and County of San Francisco, CA

AGENCY: Federal Transit Administration (FTA), DOT.

ACTION: Notice of intent to prepare an environmental impact statement (EIS).

SUMMARY: The FTA, as the lead Federal agency, and the San Francisco Bay Area Water Emergency Transportation Authority (WETA) are planning to prepare an EIS for the proposed expansion and improvements to the Downtown San Francisco Ferry Terminal at the Port of San Francisco Ferry Building. The proposed project would serve commuters, visitors, and recreational users desiring an alternative way to cross San Francisco Bay, and reach nearby employment, entertainment, and recreational destinations in San Francisco. The project expands the number of ferry gates and improves ferry patron circulation, boarding, and wayfinding in and around the Ferry Building. In addition, the project enhances emergency response capabilities to evacuate people from San Francisco and/or mobilize first responders to San Francisco via ferries if a catastrophic event occurs. The EIS will be prepared in accordance with Section 102(2)C of the National Environmental Policy Act of 1969 (NEPA) and pursuant to the Council on the Environmental Quality's

regulations (40 Code of Federal Regulations [CFR] parts 1500–08) as well as provisions of the recently enacted Safe, Accountable, Flexible Efficient Transportation Equity Act: A Legacy for Users (SAFETEA–LU). The purpose of this notice is to alert interested parties regarding the intent to prepare an EIS; provide information on the proposed transit project; invite participation in the EIS process, including comments on the scope of the EIS proposed in this notice; and announce when the public scoping meeting will be conducted.

DATES: Written comments on the scope of the EIS should be sent to Mike Gougherty, WETA Project Manager, by May 16, 2011. A public scoping meeting to accept comments on the scope of the EIS will be held on the following date:

• April 26, 2011, from 5:30 p.m. to 7:30 p.m., at Pier 1, Bayside Conference Room, San Francisco, California.

An interagency scoping meeting for agencies with interest in the project will be held on the following date:

• April 26, 2011 from 2 p.m. to 4 p.m. at the Pier 1, Bayside Conference Room, San Francisco, California.

The meeting will be accessible to persons with disabilities. If special translation or signing services or other special accommodations are needed, please contact Mike Gougherty at (415) 364–3189 at least 48 hours before the meeting. A scoping information packet is available on the WETA Web site at *http://www.watertransit.org* or by calling Mike Gougherty at (415) 364–3189. Copies will also be available at the scoping meeting.

ADDRESSES: Comments on the scope of the EIS will be accepted at the public scoping meeting, or written comments should be sent to Mike Gougherty, WETA Project Manager, San Francisco Bay Water Emergency Transportation Authority, Pier 9, Suite 111, The Embarcadero, San Francisco, CA, 94111.

FOR FURTHER INFORMATION CONTACT: Debra Jones, Environmental Protection Specialist, FTA, San Francisco Regional Office at (415) 744–3133.

SUPPLEMENTARY INFORMATION:

Scoping

The FTA and WETA invite all interested individuals and organizations, public agencies, and Native American Tribes to comment on the scope of the EIS, including the project's purpose and need, the alternatives to be studied, the impacts to be evaluated, and the evaluation methods to be used. Comments should address (1) feasible alternatives that may better achieve the project's need and purposes with fewer adverse impacts, and (2) any significant environmental impacts relating to the alternatives.

NEPA "scoping" (Title 40 of the CFR 1501.7) has specific and fairly limited objectives, one of which is to identify the significant issues associated with alternatives that will be examined in detail in the document, while simultaneously limiting consideration and development of issues that are not truly significant. It is in the NEPA scoping process that potentially significant environmental impacts—those that give rise to the need to prepare an environmental impact statement—should be identified; impacts that are deemed not to be significant need not be developed extensively in the context of the impact statement, thereby keeping the statement focused on impacts of consequence consistent with the ultimate objectives of the NEPA implementing regulations—"to make the environmental impact statement process more useful to decision makers and the public; and to reduce paperwork and the accumulation of extraneous background data, in order to emphasize the need to focus on real environmental issues and alternatives… [by requiring] impact statements to be concise, clear, and to the point, and supported by evidence that agencies have made the necessary environmental analyses." Executive Order 11991, of May 24, 1977.

Once the scope of the environmental study, including significant environmental issues to be addressed, is settled, a scoping report will be prepared that: (1) Documents the results of the scoping process; (2) contributes to the transparency of the process; and (3) provides a clear roadmap for concise development of the environmental document.

Purpose and Need for the Project

The purpose of the Downtown San Francisco Ferry Terminal Expansion Project is to support and expand ferry service on San Francisco Bay, as established by WETA in its Implementation and Operations Plan (IOP), and in accordance with city and regional policies to encourage transit use. Furthermore, the project will address deficiencies in the transportation network that impede ferry operation and ferry patron access and circulation at the Downtown San Francisco Ferry Terminal. The project objectives include:

• Accommodate WETA's projected increase in ferry ridership and related ferry arrivals and departures from the Downtown San Francisco Ferry Terminal;

• Provide a viable alternative mode of transportation that accommodates projected increases in transbay trips, and helps alleviates congestion over the Bay Bridge and through the Bay Area Rapid Transit (BART) Transbay Tube;

• Address WETA's and the Port of San Francisco's (Port) emergency response needs;

• Establish a circulation plan and improved signage that provides clear pedestrian routes for ferry to bus and ferry to rail transfers, as well as safe routes for bikes, emergency vehicles, and delivery trucks to enter, park and exit the area;

• Provide necessary landside improvements, such as designated weather-protected areas for waiting and queuing, ticket machines and fare collection equipment, improved lighting, and improved boarding and arrival/departure information to serve ferry patrons and to enhance the Ferry Building as the central point of embarkation for ferries on San Francisco Bay; and

• Enhance the area's public access and open space with design features that create attractive, safe daytime and nighttime public spaces for both ferry patrons and other users of the Ferry Building area;

• Recognize the Port's land use planning and development proposals in and around the Ferry Building so as not to preclude, conflict with, or inhibit proposed development plans in the project vicinity.

WETA recognizes and supports the Port of San Francisco's land use planning and development proposals in and around the Ferry Building, including the historic renovation of the Agricultural Building and enhancements to the Ferry Plaza area. These Port initiatives are being planned and funded independent of the WETA project and, as a result, are not included as project elements. WETA will stage construction and manage and operate ferry services so they do not preclude, conflict with, or inhibit the Port's proposed development plans in the project vicinity.

Project Location and Environmental Setting

The project is located in the northeastern section of San Francisco, California, at the San Francisco Ferry Building, situated at the foot of Market Street. The study area encompasses Port of San Francisco property between Pier 1 on the north and Pier 14 on the south, and includes the Ferry Building, ferry gates, and the Ferry Plaza.

Possible Alternatives

A study of potential ferry terminal improvements at the San Francisco Ferry Building was completed by the Port in 1994. The planning process, summarized in the Downtown San Francisco Ferry Terminal Project, Concept Design—Stage 1 Final Report, addressed deficiencies in the circulation of pedestrians across the Embarcadero and through the Ferry Building; constraints imposed by previous design modifications of the Ferry Building that obscured wayfinding to the ferry gates; limited opportunities for public gathering and access to the Bay; and restricted commercial development within the building. A variety of design, configuration, and circulation improvements were considered. The Port selected those improvements that best met its long-term public service and facility objectives, and completed those projects, including construction of Gates B and E and the south basin breakwater at Pier 14, as Phase 1 of the Downtown San Francisco Ferry Terminal Project in 2003. This project builds on the previous improvements, described under the Action Alternative below. In addition to the Action Alternative, WETA considers the effects of doing nothing, identified as the No Action Alternative. Both the Action and No Action Alternatives are being considered in the EIS, as described below.

No Action Alternative. Six ferry routes currently serve the Downtown San Francisco Ferry Terminal. Today, the Downtown San Francisco Ferry Terminal has approximately 130 ferry arrivals and departures daily, serving more than 10,000 daily ferry patrons.

The existing Ferry Terminal gate configuration serves current ferry operations and provides the circulation areas to access these gates. The No Action Alternative maintains the existing ferry services, gate configuration, and circulation areas, including the function, uses, and design of the Ferry Building, which also serves as an important public space in San Francisco. No new gates or additional boarding capacity to accommodate new ferry services would occur as part of the No Action Alternative. Similarly, circulation and boarding improvements to respond to emergency planning requirements would not be implemented.

The No Action Alternative retains vehicle circulation and drop-off areas near the Ferry Building as well as the current circulation patterns for ferry patrons to access the ferry boarding areas. Pedestrian pathways to boarding locations for San Francisco Municipal Railway (Muni) bus and streetcar lines and the Amtrak bus would remain unchanged. Programmed Transbay bus and rail transit improvements identified in the Regional Transportation Plan would be implemented as part of the No Action Alternative. This alternative serves as the baseline against which the environmental effects of the other alternatives are measured.

Action Alternative. The Action Alternative incorporates modifications and improvements to the Ferry Terminal gates and ferry boarding areas to accommodate future WETA service and increased ferry patronage. Current estimates for 2025 projected daily ridership at the Ferry Terminal are approximately 35,000 passengers. The ridership projections account for existing service, plus new ferry services from downtown San Francisco to Berkeley, Treasure Island, Hercules, Richmond, Redwood City, Martinez, and Antioch to be initiated between 2014 and 2030. Service frequencies during the day and evenings would reflect the travel demand for commute and non-commute periods. Existing services operated by others (*i.e.,* Sausalito, Larkspur, and Tiburon), and existing services operated by WETA (*i.e.,* Vallejo, Alameda/Oakland, and Alameda Harbor Bay) would remain, but the access and boarding environments for these services would be improved by the project.

In addition, landside improvements to allow staging and circulation for possible emergency evacuation at the Ferry Building are included in the Action Alternative. The modifications and improvements are the responsibility of WETA in cooperation with the Port of San Francisco, with funding coming from Regional Measure 2, State Proposition 1B, and FTA.

The WETA-sponsored improvements represent sequential construction phases (Phase 2 and Phase 3). As noted previously, the Phase 2 and Phase 3 improvements build on those elements already completed by the Port in 2003 during Phase 1. Phase 2, which is expected to be completed by 2017, will include:

- Demolition and removal of Pier ½ and Pier 2;
- Construction of Gate A in the north basin, and Gates F and G in the south basin;
- Installation of boarding area amenities such as weather-protected areas for queuing, ticket machines and fare collection equipment, improved lighting, and ferry boarding and arrival/departure information signs;
- Widening of ferry access pathways along existing pedestrian promenades, and separation of ferry patron queuing from other pedestrian and vehicular movements where possible;
- Improved wayfinding signage in the vicinity of the Ferry Building, which will indicate ferry boarding areas and transit connections; and
- Filling in the lagoon to prepare for and accommodate staging and circulation of evacuees following a catastrophic event.

As new ferry gates are constructed, existing ferry services would relocate to new gates. Pier demolition and construction activities would be staged and sequenced to allow continuity of existing ferry services during construction. Demolition of Pier ½ would precede construction of Gate A. Similarly, demolition of Pier 2 would precede construction of Gate F. Gate G, which is designated for ferry services not expected to operate until 2020 or later, would serve as a vessel layover location, temporary storage area, and emergency boarding location in the interim. WETA's capital improvement plan synchronizes the purchase or leasing of vessels to meet future service and emergency response requirements.

Phase 3 is contingent on the implementation of the Treasure Island Redevelopment Plan. At full build-out, expected to occur sometime between 2020 and 2030, new commercial, recreational, and residential facilities on Treasure Island would require additional ferry capacity to serve substantial numbers of visitors and residents. The additional capacity would be provided by larger, bow-loading vessels purchased by the Treasure Island developer, and operated by WETA. The bow-loading vessels would necessitate the redesign of Gate E to accommodate the larger ferries.

Possible Effects

The purpose of this EIS process is to study, in a public setting, the potentially significant effects of the proposed project on the quality of the human environment. Primary areas of investigation for this project include, but are not limited to: land use, development potential, displacements, historic resources, visual and aesthetic qualities, air quality, noise and vibration, dredging and bay fill requirements, hazardous materials resulting from demolition and construction activities, traffic circulation and transportation linkages, pedestrian circulation, safety, security, and emergency response, bay habitat, and cumulative impacts. The environmental analysis may reveal that

the proposed project will not affect, or affect substantially, many of those areas. However, if any adverse impacts are identified, measures to avoid, minimize, or mitigate those adverse impacts will be proposed.

FTA Procedures

Regulations implementing NEPA, as well as provisions of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA–LU), call for public involvement in the EIS process. Section 6002 of SAFETEA–LU (23 U.S.C. 139) requires that FTA and WETA do the following: (1) Extend an invitation to other Federal and non-Federal agencies and Native American Tribes that may have an interest in the proposed project to become "participating agencies;" (2) provide an opportunity for involvement by participating agencies and the public to help define the purpose and need for a proposed project, as well as the range of alternatives for consideration in the EIS; and (3) establish a plan for coordinating public and agency participation in, and comment on, the environmental review process. An invitation to become a participating or cooperating agency, with scoping materials appended, will be extended to other Federal and non-Federal agencies and Native American Tribes that may have an interest in the proposed project. It is possible that FTA and WETA will not be able to identify all Federal and non-Federal agencies and Native American Tribes that may have such an interest. Any Federal or non-Federal agency or Native American Tribe interested in the proposed project that does not receive an invitation to become a participating agency should notify at the earliest opportunity the Project Manager identified above under **ADDRESSES**.

A comprehensive public involvement program for public and interagency involvement will be developed for the project and posted on WETA's Web site: *http://www.watertransit.org.* The public involvement program includes a full range of activities including maintaining the project Web page on the WETA Web site and outreach to local officials, community and civic groups, and the public.

Paperwork Reduction

The Paperwork Reduction Act seeks, in part, to minimize the cost to the taxpayer of the creation, collection, maintenance, use, dissemination, and disposition of information. Consistent with this goal and with principles of economy and efficiency in government, it is FTA policy to limit insofar as possible distribution of complete printed sets of environmental documents. Accordingly, unless a specific request for a complete printed set of environmental documents is received (preferably in advance of printing), FTA and its grantees will distribute only the executive summary of the environmental document together with a compact disc of the complete environmental document. A complete printed set of the environmental document will be available for review at the grantee's offices and elsewhere; an electronic copy of the complete environmental document will also be available on the grantee's Web site.

Other

The EIS will be prepared in accordance with NEPA and its implementing regulations issued by the Council on Environmental Quality (40 CFR parts 1500–1508), and with the FTA/Federal Highway Administration regulations "Environmental Impact and Related Procedures" (23 CFR part 771).

Issued on: March 31, 2011.

Leslie T. Rogers,

Regional Administrator, FTA, Region 9.

[FR Doc. 2011–8227 Filed 4–6–11; 8:45 am]

BILLING CODE 4910–57–P

DEPARTMENT OF TRANSPORTATION

Federal Transit Administration

Notice of Limitation on Claims Against Proposed Public Transportation Projects

AGENCY: Federal Transit Administration (FTA), DOT.

ACTION: Notice of limitation on claims.

SUMMARY: This notice announces final environmental actions taken by the Federal Transit Administration (FTA) for the following projects: (1) Hatcher Pass Recreational Area Access, Trails, and Transit Facilities Project, Matanuska-Susitna Borough, Hatcher Pass, AK; (2) Bus Rapid Transit Project, Roaring Fork Transportation Authority, Pitkin, Eagle, and Garfield Counties, CO; (3) Second Avenue Subway Project, Metropolitan Transportation Authority, New York, NY; and (4) Sugar House Streetcar Project, Utah Transit Authority, South Salt Lake and Salt Lake City, Salt Lake County, UT. The purpose of this notice is to announce publicly the environmental decisions by FTA on the subject projects and to activate the limitation on any claims that may challenge these final environmental actions.

DATES: By this notice, FTA is advising the public of final agency actions subject to Section 139(l) of Title 23, United States Code (U.S.C.). A claim seeking judicial review of the FTA actions announced herein for the listed public transportation projects will be barred unless the claim is filed on or before September 30, 2011.

FOR FURTHER INFORMATION CONTACT: Katie Grasty, Environmental Protection Specialist, Office of Planning and Environment, 202–366–9139, or Christopher Van Wyk, Attorney-Advisor, Office of Chief Counsel, 202–366–1733. FTA is located at 1200 New Jersey Avenue, SE., Washington, DC 20590. Office hours are from 9 a.m. to 5:30 p.m., EST, Monday through Friday, except Federal holidays.

SUPPLEMENTARY INFORMATION: Notice is hereby given that FTA has taken final agency actions by issuing certain approvals for the public transportation projects listed below. The actions on these projects, as well as the laws under which such actions were taken, are described in the documentation issued in connection with each project to comply with the National Environmental Policy Act (NEPA) and in other documents in the FTA administrative record for the project. Interested parties may contact either the project sponsor or the relevant FTA Regional Office for more information on these projects. Contact information for FTA's Regional Offices may be found at *http://www.fta.dot.gov.*

This notice applies to all FTA decisions on the listed projects as of the issuance date of this notice and all laws under which such actions were taken, including, but not limited to, NEPA [42 U.S.C. 4321–4375], Section 4(f) of the Department of Transportation Act of 1966 [49 U.S.C. 303], Section 106 of the National Historic Preservation Act [16 U.S.C. 470f], and the Clean Air Act [42 U.S.C. 7401–7671q]. This notice does not, however, alter or extend the limitation period of 180 days for challenges of project decisions subject to previous notices published in the **Federal Register**. For example, this notice does not extend the limitation on claims announced for earlier decisions on the Second Avenue Subway project.

The projects and actions that are the subject of this notice are:

1. *Project name and location:* Hatcher Pass Recreational Area Access, Trails, and Transit Facilities Project, Hatcher Pass, AK. *Project sponsor:* Matanuska-Susitna Borough. *Project description:* The project consists of the development of transportation access and transit-related infrastructure to improve access

APPENDIX C
SCOPING MEETING NOTICE

PROOF OF PUBLICATION

(2015.5 C.C.P.)

THE EXAMINER

71 Stevenson St, 2nd Floor, San Francisco, CA 94105
Phone 415-359-2723; Fax 415-359-2659
wweinthal@sfexaminer.com

STATE OF CALIFORNIA
County of San Francisco

Walter Weinthal

deposes and says that all times herein mentioned he was and is a citizen of the United States, and a resident of the County aforesaid, over the age of eighteen years, and not a party to or interested in the above-entitled matter; and is and was during and at all said times, the Principal Clerk of the Printer and Publisher of THE EXAMINER, a newspaper of general circulation, printed and published in the County of San Francisco, and which newspaper has been adjudged a newspaper of general circulation by the Superior Court of the County of San Francisco, State of California, under the date of October 18, 1951, Case Number 410667; that the notice, of which the annexed is a printed copy (set in type not smaller than nonpareil), has been published in each regular and entire issue of said newspaper and not in any supplement thereof on the following dates, to-wit:

March 31

all in the year(s) 2011

I certify (or declare) under penalty of perjury that the foregoing is true and correct.

Dated at San Francisco, San Francisco County, California,

3/31/2011

Signature: Walter Weinthal

SCOPING MEETING NOTICE
Mara Feeney & Associates

SCOPING MEETING NOTICE

The Federal Transit Administration and the S.F. Bay Water Emergency Transportation Authority invite you to attend a Scoping Meeting:

Tuesday, April 26, 5:30 pm
Bayside Conference Rooms
Pier 1, San Francisco CA

The purpose of the meeting is to present information on the proposed Downtown San Francisco Ferry Terminal Expansion Project, and to provide an opportunity for public comment on the scope of the environmental analysis to be conducted in accordance with the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA). An Open House meeting will begin at 5:30 pm, with a formal presentation at 6:15 pm. Further information is available at www.watertransit.org.

APPENDIX D
AGENCY INVITATION LETTERS

U.S. Department
of Transportation
**Federal Transit
Administration**

REGION IX
Arizona, California,
Hawaii, Nevada, Guam
American Samoa,
Northern Mariana Islands

201 Mission Street
Suite 1650
San Francisco, CA 94105-1839
415-744-3133
415-744-2726 (fax)

APR 7 2011

Mr. George Isaac
California Department of Fish and Game
20 Lower Ragsdale Drive, Suite 100
Monterey, CA 93940

Re: Invitation to Participate in the
Environmental Review Process for the
Downtown San Francisco Ferry Terminal
Expansion Project

Dear Mr. Isaac:

The Federal Transit Administration (FTA), in cooperation with the San Francisco Bay Area Water Emergency Transportation Authority (WETA) is initiating the preparation of an Environmental Impact Statement and Environmental Impact Report for the proposed Downtown San Francisco Ferry Terminal Expansion Project. The proposed project expands the number of ferry gates and improves ferry patron circulation, boarding, and wayfinding in and around the Ferry Building located at the foot of Market Street in downtown San Francisco. The purpose of the project, as currently defined, is to support and expand ferry service on San Francisco Bay, as established by WETA in its Implementation and Operations Plan, and in accordance with city and regional policies to encourage transit use. The project will address deficiencies in the transportation network that impede ferry operation and ferry patron access and circulation at the Downtown San Francisco Ferry Terminal. In addition, the project will enhance emergency response capabilities to evacuate people from San Francisco and/or mobilize first responders to San Francisco via ferries if a catastrophic event occurs. The enclosed Scoping Meeting Notice and Notice of Intent provide more details.

Section 6002 of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users establishes an enhanced environmental review process for certain FTA projects, increasing the transparency of the process, as well as opportunities for participation. The requirements of Section 6002 apply to the project that is the subject of this letter. As part of the environmental review process for this project, the lead agencies must identify, as early as practicable, any other Federal and non-Federal agencies that may have an interest in the project, and invite such agencies to become participating agencies in the environmental review process. Your agency has been identified preliminarily as one that may have an interest in this project, because *the project could potentially affect hydrology and water quality, hazardous materials, biological resources, cultural resources, navigation, and bayside land uses*; accordingly, you are being extended this invitation to become actively involved as a participating agency in the environmental review process for the project.

As a participating agency, you will be afforded the opportunity, together with the public, to be involved in defining the purpose of and need for the project, as well as in determining the range of alternatives to be considered for the project. In addition, you will be asked to:

- Provide input on the impact assessment methodologies and level of detail in your agency's area of expertise;
- Participate in coordination meetings, conference calls, and joint field reviews, as appropriate; and
- Review and comment on sections of the pre-draft or pre-final environmental documents to communicate any concerns of your agency on the adequacy of the document, the alternatives considered, and the anticipated impacts and mitigation.

Federal agencies:

Your agency does not have to accept this invitation. If, however, you elect not to become a participating agency, you must decline this invitation in writing, indicating that your agency has no jurisdiction or authority with respect to the project, no expertise or information relevant to the project, and does not intend to submit comments on the project. The declination may be transmitted electronically to Debra Jones (debra.jones@dot.gov); please include the title of the official responding. In order to give your agency adequate opportunity to weigh the relevance of your participation in this environmental review process, written response to this invitation are not due until after the interagency scoping meeting scheduled for 2:00 to 4:00 p.m. on April 26, 2011, at the Bayside Conference Rooms, Pier 1, The Embarcadero, San Francisco. You or your delegate is invited to represent your agency at this meeting. Your agency will be treated as participating agency unless your written response declining such designation as outlined above is transmitted to this office not later than May 16, 2011.

Non-Federal agencies:

If you elect to become a participating agency, you must accept this invitation in writing. The acceptance may be transmitted electronically to Debra Jones (debra.jones@dot.gov); please include the title of the official responding. In order to give your agency adequate opportunity to weigh the relevance of your participation in this environmental review process, written responses to this invitation are not due until after the interagency scoping meeting, scheduled for 2:00 to 4:00 p.m. on April 26, 2011, at the Bayside Conference Rooms, Pier 1, The Embarcadero, San Francisco. You or your delegate is invited to represent your agency at this meeting. Written responses accepting designation as participating agencies should be transmitted to this office not later than May 16, 2011.

Additional information will be forthcoming during the scoping process. If you have questions regarding this invitation, please contact Debra Jones @ (415) 744-3112.

Sincerely,

Leslie T. Rogers
Regional Administrator

Attachments: Scoping Meeting Notice and Notice of Intent

Copy:
Michael Gougherty, Water Emergency Transportation Authority

WATER EMERGENCY TRANSPORTATION AUTHORITY

WETA

NOTICE OF PUBLIC SCOPING MEETING

Downtown San Francisco Ferry Terminal Expansion Project
Water Emergency Transportation Authority (WETA)
Federal Transit Administration (FTA)

As the federal and local Lead Agencies, respectively, the FTA and WETA are preparing a joint Environmental Impact Statement/Environmental Impact Report (EIS/EIR) for the proposed expansion and improvements to the Downtown San Francisco Ferry Terminal at the Port of San Francisco Ferry Building. The EIS/EIR will be prepared to satisfy the requirements of the National Environmental Policy Act and the California Environmental Quality Act.

Project Location:
The project is located in the northeastern section of San Francisco, California, at the San Francisco Ferry Building, situated at the foot of Market Street. The study area encompasses Port of San Francisco property between Pier 1 on the north and Pier 14 on the south, and includes the Ferry Building, ferry gates, and the Ferry Plaza.

Project Description:
The purpose of the Downtown San Francisco Ferry Terminal Expansion Project is to support and expand ferry service on San Francisco Bay, as established by WETA in its Implementation and Operations Plan, and in accordance with city and regional policies to encourage transit use. Furthermore, the project would address deficiencies in the transportation network that impede ferry operation and ferry patron access and circulation at the Downtown San Francisco Ferry Terminal.

The project would expand the number of ferry gates and improves ferry patron circulation, boarding, and wayfinding in and around the Ferry Building. In addition, the project would enhance emergency response capabilities to evacuate people from San Francisco and/or mobilize first responders to San Francisco via ferries if a catastrophic event occurs.

The WETA-sponsored improvements represent the continuation of improvements at the San Francisco Ferry Terminal and would include:

- Demolition and removal of Pier ½ and Pier 2;
- Construction of Gate A in the north basin, and Gates F and G in the south basin;
- Installation of boarding area amenities such as weather-protected areas for queuing, ticket machines and fare collection equipment, improved lighting, and ferry boarding and arrival/departure information signs;
- Widening of ferry access pathways along existing pedestrian promenades, and separation of ferry patron queuing from other pedestrian and vehicular movements where possible;
- Improved wayfinding signage in the vicinity of the Ferry Building, that will indicate ferry boarding areas and transit connections; and
- Filling in the lagoon to prepare for and accommodate staging and circulation of evacuees following a catastrophic event.

Public Scoping Meeting: The purpose of the Scoping Meeting is to present information regarding the environmental review process, and to provide opportunities for public input on the scope of the environmental analysis to be conducted for this project. Information about future opportunities for public comment will also be provided. A resource agency staff meeting (also open to the public) will take place in the same location from 2:00 p.m. to 4:00 p.m.

The public scoping meeting will be held:

April 26, 2011
Open House 5:30 p.m., presentation 6:15 p.m.
Bayside Conference Rooms
Pier 1, The Embarcadero
San Francisco, CA 94111

A Notice of Preparation and Notice of Intent are being circulated by WETA and FTA for the purpose of defining the scope and content of the EIS/EIR. The 45-day period for the public to provide comments ends on May 16, 2011. Copies of the Notice of Preparation and Notice of Intent are available for public review via the web at: http://www.watertransit.org/, or at WETA's office: Pier 9, Suite 111, The Embarcadero, San Francisco, CA.

For More Information: Please direct questions regarding the Scoping Meeting to Mike Gougherty, WETA Project Manager, at (415) 364-3189. The meeting will be accessible to persons with disabilities. If special translation or signing services or other special accommodations are needed, please contact Mike Gougherty at least 48 hours before the meeting.

If you are not able to attend the Scoping Meeting but would like to provide written comments for consideration in the EIS/EIR, please send to:

Mike Gougherty
WETA Project Manager
San Francisco Bay Water Emergency Transportation Authority
Pier 9, Suite 111, The Embarcadero
San Francisco, CA 94111.

Comments must be received by May 16, 2011 to be considered.

A fact sheet providing further details about the proposed project can be found at: http://www.watertransit.org/.

responsibility for the incidents on the acts or omissions of any person or entity.

Two railroad employees, while each riding the side of rolling equipment to protect a shoving movement, were fatally injured (in separate incidents) when the equipment they were riding struck other equipment that was left out to foul. A common factor in both accidents was that the equipment was left in a location where it fouled an adjacent track by the very employees who were involved in the incidents.

The first incident occurred on September 2, 2010, in Bridgeport, New Jersey, when a conventional two-person switching crew was shoving rolling equipment into an industrial facility. The locomotive engineer was in the locomotive control compartment and the conductor was positioned on the leading end of a tank car directing the shoving move. The conductor had one foot on the end platform and the other on the side ladder tread as he began to pass a tank car that he had spotted at that location the previous day. Unfortunately, the car had been left in the foul of the adjacent track and the cars struck each other; the conductor sustained fatal injuries.

The second incident occurred on February 8, 2011, in Kankakee, Illinois. A conventional switching crew that consisted of a conductor, engineer, and a conductor-in-training was switching cars on a switching lead track and using various other yard tracks. The crew had left a car on one of the yard tracks in a location where it was in the foul of an adjacent track. Shortly thereafter, the conductor and conductor-in-training boarded opposite sides of the leading end of a gondola car and began a shoving movement. Subsequently, the side of the gondola on which the conductor was riding struck the car that was previously left in the foul of the adjacent track. The conductor was crushed between the two cars and sustained fatal injuries.

Although the preponderance of incidents involving equipment that is left in the foul of an adjacent track fortunately only result in railroad property damage, the potential for injury or death in such instances is always present. By issuing this safety advisory, FRA is reminding all stakeholders of the importance of situational awareness and compliance with all applicable operating and safety rules, particularly those related to leaving rolling equipment in a location that is clear of adjacent tracks.

FRA Action: Despite the significant reduction in train accidents caused by equipment being left in the foul of an adjacent track, a review of FRA's inspection data relative to 49 CFR 218.101 indicates a disturbing trend. From calendar year (CY) 2009 to CY 2010, violations of 49 CFR 218.101 recommended for prosecution by FRA inspectors increased 124 percent. Based on the results of inspection data for the first 2 months of 2011, if trends continue, violations recommended for prosecution in 2011 versus 2010 would increase by an additional 81 percent. Whether the increase in violations is due to greater vigilance by FRA or is due to an actual increase in the number of instances where equipment is being left in such locations, FRA intends to ensure that railroads take necessary steps to prevent and reduce the potential trend indicated by the statistics noted above.

Over the next several months, FRA intends to increase its inspection activity to focus on compliance with railroad operating rules that address all of the requirements contained in Subpart F. Particular emphasis will be placed on the requirements contained in 49 CFR 218.101. FRA will also focus its inspection efforts on railroad operational testing activity, particularly as it relates to Subpart F. FRA strongly encourages railroad industry members to reemphasize the importance of leaving equipment in the clear as frequently as possible, and to take such other actions as may help ensure safety on the Nation's railroads.

Recommended Railroad Action: In light of the recent accidents discussed above, and in an effort to maintain the safety of railroad employees on the Nation's rail system, FRA recommends that railroads:

(1) Review with employees the circumstances of the two most recent fatal incidents;

(2) Reinstruct supervisors and employees on the operating and safety rules applicable to leaving rolling equipment in a location that is clear of adjacent tracks. Particular emphasis should be placed on the procedures that enable employees to identify clearance points and the means to identify locations where clearance points will not permit a person to safely ride on the side of a car;

(3) Increase operational testing on those operating and safety rules that pertain to leaving rolling equipment in a location that is clear of adjacent tracks; and

(4) Review current job briefing procedures among coworkers and determine if the procedures are sufficient to encourage more effective communication regarding switching activities, specifically as the procedures relate to the positioning of rolling equipment so that the equipment is in a location that is clear of adjacent tracks.

FRA encourages railroad industry members to take action that is consistent with the preceding recommendations and to take other actions to help ensure the safety of the Nation's railroad employees. FRA may modify this Safety Advisory 2011–01, issue additional safety advisories, or take other appropriate action necessary to ensure the highest level of safety on the Nation's railroads, including pursing other corrective measures under its rail safety authority.

Issued in Washington, DC, on April 1, 2011.

Jo Strang,

Associate Administrator for Railroad Safety/ Chief Safety Officer.

[FR Doc. 2011–8232 Filed 4–6–11; 8:45 am]

BILLING CODE 4910–06–P

DEPARTMENT OF TRANSPORTATION

Federal Transit Administration

Intent To Prepare an Environmental Impact Statement for the Downtown San Francisco Ferry Terminal Expansion Project in the City and County of San Francisco, CA

AGENCY: Federal Transit Administration (FTA), DOT.

ACTION: Notice of intent to prepare an environmental impact statement (EIS).

SUMMARY: The FTA, as the lead Federal agency, and the San Francisco Bay Area Water Emergency Transportation Authority (WETA) are planning to prepare an EIS for the proposed expansion and improvements to the Downtown San Francisco Ferry Terminal at the Port of San Francisco Ferry Building. The proposed project would serve commuters, visitors, and recreational users desiring an alternative way to cross San Francisco Bay, and reach nearby employment, entertainment, and recreational destinations in San Francisco. The project expands the number of ferry gates and improves ferry patron circulation, boarding, and wayfinding in and around the Ferry Building. In addition, the project enhances emergency response capabilities to evacuate people from San Francisco and/or mobilize first responders to San Francisco via ferries if a catastrophic event occurs. The EIS will be prepared in accordance with Section 102(2)C of the National Environmental Policy Act of 1969 (NEPA) and pursuant to the Council on the Environmental Quality's

regulations (40 Code of Federal Regulations [CFR] parts 1500–08) as well as provisions of the recently enacted Safe, Accountable, Flexible Efficient Transportation Equity Act: A Legacy for Users (SAFETEA–LU). The purpose of this notice is to alert interested parties regarding the intent to prepare an EIS; provide information on the proposed transit project; invite participation in the EIS process, including comments on the scope of the EIS proposed in this notice; and announce when the public scoping meeting will be conducted.

DATES: Written comments on the scope of the EIS should be sent to Mike Gougherty, WETA Project Manager, by May 16, 2011. A public scoping meeting to accept comments on the scope of the EIS will be held on the following date:

- April 26, 2011, from 5:30 p.m. to 7:30 p.m., at Pier 1, Bayside Conference Room, San Francisco, California.

An interagency scoping meeting for agencies with interest in the project will be held on the following date:

- April 26, 2011 from 2 p.m. to 4 p.m. at the Pier 1, Bayside Conference Room, San Francisco, California.

The meeting will be accessible to persons with disabilities. If special translation or signing services or other special accommodations are needed, please contact Mike Gougherty at (415) 364–3189 at least 48 hours before the meeting. A scoping information packet is available on the WETA Web site at *http://www.watertransit.org* or by calling Mike Gougherty at (415) 364–3189. Copies will also be available at the scoping meeting.

ADDRESSES: Comments on the scope of the EIS will be accepted at the public scoping meeting, or written comments should be sent to Mike Gougherty, WETA Project Manager, San Francisco Bay Water Emergency Transportation Authority, Pier 9, Suite 111, The Embarcadero, San Francisco, CA, 94111.

FOR FURTHER INFORMATION CONTACT: Debra Jones, Environmental Protection Specialist, FTA, San Francisco Regional Office at (415) 744–3133.

SUPPLEMENTARY INFORMATION:

Scoping

The FTA and WETA invite all interested individuals and organizations, public agencies, and Native American Tribes to comment on the scope of the EIS, including the project's purpose and need, the alternatives to be studied, the impacts to be evaluated, and the evaluation methods to be used. Comments should address (1) feasible alternatives that may better achieve the project's need and purposes with fewer adverse impacts, and (2) any significant environmental impacts relating to the alternatives.

NEPA "scoping" (Title 40 of the CFR 1501.7) has specific and fairly limited objectives, one of which is to identify the significant issues associated with alternatives that will be examined in detail in the document, while simultaneously limiting consideration and development of issues that are not truly significant. It is in the NEPA scoping process that potentially significant environmental impacts—those that give rise to the need to prepare an environmental impact statement—should be identified; impacts that are deemed not to be significant need not be developed extensively in the context of the impact statement, thereby keeping the statement focused on impacts of consequence consistent with the ultimate objectives of the NEPA implementing regulations—"to make the environmental impact statement process more useful to decision makers and the public; and to reduce paperwork and the accumulation of extraneous background data, in order to emphasize the need to focus on real environmental issues and alternatives... [by requiring] impact statements to be concise, clear, and to the point, and supported by evidence that agencies have made the necessary environmental analyses." Executive Order 11991, of May 24, 1977.

Once the scope of the environmental study, including significant environmental issues to be addressed, is settled, a scoping report will be prepared that: (1) Documents the results of the scoping process; (2) contributes to the transparency of the process; and (3) provides a clear roadmap for concise development of the environmental document.

Purpose and Need for the Project

The purpose of the Downtown San Francisco Ferry Terminal Expansion Project is to support and expand ferry service on San Francisco Bay, as established by WETA in its Implementation and Operations Plan (IOP), and in accordance with city and regional policies to encourage transit use. Furthermore, the project will address deficiencies in the transportation network that impede ferry operation and ferry patron access and circulation at the Downtown San Francisco Ferry Terminal. The project objectives include:

- Accommodate WETA's projected increase in ferry ridership and related ferry arrivals and departures from the Downtown San Francisco Ferry Terminal;
- Provide a viable alternative mode of transportation that accommodates projected increases in transbay trips, and helps alleviates congestion over the Bay Bridge and through the Bay Area Rapid Transit (BART) Transbay Tube;
- Address WETA's and the Port of San Francisco's (Port) emergency response needs;
- Establish a circulation plan and improved signage that provides clear pedestrian routes for ferry to bus and ferry to rail transfers, as well as safe routes for bikes, emergency vehicles, and delivery trucks to enter, park and exit the area;
- Provide necessary landside improvements, such as designated weather-protected areas for waiting and queuing, ticket machines and fare collection equipment, improved lighting, and improved boarding and arrival/departure information to serve ferry patrons and to enhance the Ferry Building as the central point of embarkation for ferries on San Francisco Bay; and
- Enhance the area's public access and open space with design features that create attractive, safe daytime and nighttime public spaces for both ferry patrons and other users of the Ferry Building area;
- Recognize the Port's land use planning and development proposals in and around the Ferry Building so as not to preclude, conflict with, or inhibit proposed development plans in the project vicinity.

WETA recognizes and supports the Port of San Francisco's land use planning and development proposals in and around the Ferry Building, including the historic renovation of the Agricultural Building and enhancements to the Ferry Plaza area. These Port initiatives are being planned and funded independent of the WETA project and, as a result, are not included as project elements. WETA will stage construction and manage and operate ferry services so they do not preclude, conflict with, or inhibit the Port's proposed development plans in the project vicinity.

Project Location and Environmental Setting

The project is located in the northeastern section of San Francisco, California, at the San Francisco Ferry Building, situated at the foot of Market Street. The study area encompasses Port of San Francisco property between Pier 1 on the north and Pier 14 on the south, and includes the Ferry Building, ferry gates, and the Ferry Plaza.

Possible Alternatives

A study of potential ferry terminal improvements at the San Francisco Ferry Building was completed by the Port in 1994. The planning process, summarized in the Downtown San Francisco Ferry Terminal Project, Concept Design—Stage 1 Final Report, addressed deficiencies in the circulation of pedestrians across the Embarcadero and through the Ferry Building; constraints imposed by previous design modifications of the Ferry Building that obscured wayfinding to the ferry gates; limited opportunities for public gathering and access to the Bay; and restricted commercial development within the building. A variety of design, configuration, and circulation improvements were considered. The Port selected those improvements that best met its long-term public service and facility objectives, and completed those projects, including construction of Gates B and E and the south basin breakwater at Pier 14, as Phase 1 of the Downtown San Francisco Ferry Terminal Project in 2003. This project builds on the previous improvements, described under the Action Alternative below. In addition to the Action Alternative, WETA considers the effects of doing nothing, identified as the No Action Alternative. Both the Action and No Action Alternatives are being considered in the EIS, as described below.

No Action Alternative. Six ferry routes currently serve the Downtown San Francisco Ferry Terminal. Today, the Downtown San Francisco Ferry Terminal has approximately 130 ferry arrivals and departures daily, serving more than 10,000 daily ferry patrons.

The existing Ferry Terminal gate configuration serves current ferry operations and provides the circulation areas to access these gates. The No Action Alternative maintains the existing ferry services, gate configuration, and circulation areas, including the function, uses, and design of the Ferry Building, which also serves as an important public space in San Francisco. No new gates or additional boarding capacity to accommodate new ferry services would occur as part of the No Action Alternative. Similarly, circulation and boarding improvements to respond to emergency planning requirements would not be implemented.

The No Action Alternative retains vehicle circulation and drop-off areas near the Ferry Building as well as the current circulation patterns for ferry patrons to access the ferry boarding areas. Pedestrian pathways to boarding locations for San Francisco Municipal Railway (Muni) bus and streetcar lines and the Amtrak bus would remain unchanged. Programmed Transbay bus and rail transit improvements identified in the Regional Transportation Plan would be implemented as part of the No Action Alternative. This alternative serves as the baseline against which the environmental effects of the other alternatives are measured.

Action Alternative. The Action Alternative incorporates modifications and improvements to the Ferry Terminal gates and ferry boarding areas to accommodate future WETA service and increased ferry patronage. Current estimates for 2025 projected daily ridership at the Ferry Terminal are approximately 35,000 passengers. The ridership projections account for existing service, plus new ferry services from downtown San Francisco to Berkeley, Treasure Island, Hercules, Richmond, Redwood City, Martinez, and Antioch to be initiated between 2014 and 2030. Service frequencies during the day and evenings would reflect the travel demand for commute and non-commute periods. Existing services operated by others (*i.e.,* Sausalito, Larkspur, and Tiburon), and existing services operated by WETA (*i.e.,* Vallejo, Alameda/Oakland, and Alameda Harbor Bay) would remain, but the access and boarding environments for these services would be improved by the project.

In addition, landside improvements to allow staging and circulation for possible emergency evacuation at the Ferry Building are included in the Action Alternative. The modifications and improvements are the responsibility of WETA in cooperation with the Port of San Francisco, with funding coming from Regional Measure 2, State Proposition 1B, and FTA.

The WETA-sponsored improvements represent sequential construction phases (Phase 2 and Phase 3). As noted previously, the Phase 2 and Phase 3 improvements build on those elements already completed by the Port in 2003 during Phase 1. Phase 2, which is expected to be completed by 2017, will include:

- Demolition and removal of Pier ½ and Pier 2;
- Construction of Gate A in the north basin, and Gates F and G in the south basin;
- Installation of boarding area amenities such as weather-protected areas for queuing, ticket machines and fare collection equipment, improved lighting, and ferry boarding and arrival/departure information signs;
- Widening of ferry access pathways along existing pedestrian promenades, and separation of ferry patron queuing from other pedestrian and vehicular movements where possible;
- Improved wayfinding signage in the vicinity of the Ferry Building, which will indicate ferry boarding areas and transit connections; and
- Filling in the lagoon to prepare for and accommodate staging and circulation of evacuees following a catastrophic event.

As new ferry gates are constructed, existing ferry services would relocate to new gates. Pier demolition and construction activities would be staged and sequenced to allow continuity of existing ferry services during construction. Demolition of Pier ½ would precede construction of Gate A. Similarly, demolition of Pier 2 would precede construction of Gate F. Gate G, which is designated for ferry services not expected to operate until 2020 or later, would serve as a vessel layover location, temporary storage area, and emergency boarding location in the interim. WETA's capital improvement plan synchronizes the purchase or leasing of vessels to meet future service and emergency response requirements.

Phase 3 is contingent on the implementation of the Treasure Island Redevelopment Plan. At full build-out, expected to occur sometime between 2020 and 2030, new commercial, recreational, and residential facilities on Treasure Island would require additional ferry capacity to serve substantial numbers of visitors and residents. The additional capacity would be provided by larger, bow-loading vessels purchased by the Treasure Island developer, and operated by WETA. The bow-loading vessels would necessitate the redesign of Gate E to accommodate the larger ferries.

Possible Effects

The purpose of this EIS process is to study, in a public setting, the potentially significant effects of the proposed project on the quality of the human environment. Primary areas of investigation for this project include, but are not limited to: land use, development potential, displacements, historic resources, visual and aesthetic qualities, air quality, noise and vibration, dredging and bay fill requirements, hazardous materials resulting from demolition and construction activities, traffic circulation and transportation linkages, pedestrian circulation, safety, security, and emergency response, bay habitat, and cumulative impacts. The environmental analysis may reveal that

the proposed project will not affect, or affect substantially, many of those areas. However, if any adverse impacts are identified, measures to avoid, minimize, or mitigate those adverse impacts will be proposed.

FTA Procedures

Regulations implementing NEPA, as well as provisions of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA–LU), call for public involvement in the EIS process. Section 6002 of SAFETEA–LU (23 U.S.C. 139) requires that FTA and WETA do the following: (1) Extend an invitation to other Federal and non-Federal agencies and Native American Tribes that may have an interest in the proposed project to become "participating agencies;" (2) provide an opportunity for involvement by participating agencies and the public to help define the purpose and need for a proposed project, as well as the range of alternatives for consideration in the EIS; and (3) establish a plan for coordinating public and agency participation in, and comment on, the environmental review process. An invitation to become a participating or cooperating agency, with scoping materials appended, will be extended to other Federal and non-Federal agencies and Native American Tribes that may have an interest in the proposed project. It is possible that FTA and WETA will not be able to identify all Federal and non-Federal agencies and Native American Tribes that may have such an interest. Any Federal or non-Federal agency or Native American Tribe interested in the proposed project that does not receive an invitation to become a participating agency should notify at the earliest opportunity the Project Manager identified above under ADDRESSES.

A comprehensive public involvement program for public and interagency involvement will be developed for the project and posted on WETA's Web site: *http://www.watertransit.org.* The public involvement program includes a full range of activities including maintaining the project Web page on the WETA Web site and outreach to local officials, community and civic groups, and the public.

Paperwork Reduction

The Paperwork Reduction Act seeks, in part, to minimize the cost to the taxpayer of the creation, collection, maintenance, use, dissemination, and disposition of information. Consistent with this goal and with principles of economy and efficiency in government, it is FTA policy to limit insofar as possible distribution of complete printed sets of environmental documents. Accordingly, unless a specific request for a complete printed set of environmental documents is received (preferably in advance of printing), FTA and its grantees will distribute only the executive summary of the environmental document together with a compact disc of the complete environmental document. A complete printed set of the environmental document will be available for review at the grantee's offices and elsewhere; an electronic copy of the complete environmental document will also be available on the grantee's Web site.

Other

The EIS will be prepared in accordance with NEPA and its implementing regulations issued by the Council on Environmental Quality (40 CFR parts 1500–1508), and with the FTA/Federal Highway Administration regulations "Environmental Impact and Related Procedures" (23 CFR part 771).

Issued on: March 31, 2011.

Leslie T. Rogers,

Regional Administrator, FTA, Region 9.

[FR Doc. 2011–8227 Filed 4–6–11; 8:45 am]

BILLING CODE 4910–57–P

DEPARTMENT OF TRANSPORTATION

Federal Transit Administration

Notice of Limitation on Claims Against Proposed Public Transportation Projects

AGENCY: Federal Transit Administration (FTA), DOT.

ACTION: Notice of limitation on claims.

SUMMARY: This notice announces final environmental actions taken by the Federal Transit Administration (FTA) for the following projects: (1) Hatcher Pass Recreational Area Access, Trails, and Transit Facilities Project, Matanuska-Susitna Borough, Hatcher Pass, AK; (2) Bus Rapid Transit Project, Roaring Fork Transportation Authority, Pitkin, Eagle, and Garfield Counties, CO; (3) Second Avenue Subway Project, Metropolitan Transportation Authority, New York, NY; and (4) Sugar House Streetcar Project, Utah Transit Authority, South Salt Lake and Salt Lake City, Salt Lake County, UT. The purpose of this notice is to announce publicly the environmental decisions by FTA on the subject projects and to activate the limitation on any claims that may challenge these final environmental actions.

DATES: By this notice, FTA is advising the public of final agency actions subject to Section 139(l) of Title 23, United States Code (U.S.C.). A claim seeking judicial review of the FTA actions announced herein for the listed public transportation projects will be barred unless the claim is filed on or before September 30, 2011.

FOR FURTHER INFORMATION CONTACT: Katie Grasty, Environmental Protection Specialist, Office of Planning and Environment, 202–366–9139, or Christopher Van Wyk, Attorney-Advisor, Office of Chief Counsel, 202–366–1733. FTA is located at 1200 New Jersey Avenue, SE., Washington, DC 20590. Office hours are from 9 a.m. to 5:30 p.m., EST, Monday through Friday, except Federal holidays.

SUPPLEMENTARY INFORMATION: Notice is hereby given that FTA has taken final agency actions by issuing certain approvals for the public transportation projects listed below. The actions on these projects, as well as the laws under which such actions were taken, are described in the documentation issued in connection with each project to comply with the National Environmental Policy Act (NEPA) and in other documents in the FTA administrative record for the project. Interested parties may contact either the project sponsor or the relevant FTA Regional Office for more information on these projects. Contact information for FTA's Regional Offices may be found at *http://www.fta.dot.gov.*

This notice applies to all FTA decisions on the listed projects as of the issuance date of this notice and all laws under which such actions were taken, including, but not limited to, NEPA [42 U.S.C. 4321–4375], Section 4(f) of the Department of Transportation Act of 1966 [49 U.S.C. 303], Section 106 of the National Historic Preservation Act [16 U.S.C. 470f], and the Clean Air Act [42 U.S.C. 7401–7671q]. This notice does not, however, alter or extend the limitation period of 180 days for challenges of project decisions subject to previous notices published in the **Federal Register**. For example, this notice does not extend the limitation on claims announced for earlier decisions on the Second Avenue Subway project.

The projects and actions that are the subject of this notice are:

1. *Project name and location:* Hatcher Pass Recreational Area Access, Trails, and Transit Facilities Project, Hatcher Pass, AK. *Project sponsor:* Matanuska-Susitna Borough. *Project description:* The project consists of the development of transportation access and transit-related infrastructure to improve access

U.S. Department
of Transportation
Federal Transit Administration

REGION IX
Arizona, California,
Hawaii, Nevada, Guam
American Samoa,
Northern Mariana Islands

201 Mission Street
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San Francisco, CA 94105-1839
415-744-3133
415-744-2726 (fax)

APR 7 2011

Mr. Gary Stern
SF Bay Region Supervisor
National Oceanographic and Atmospheric Administration Fisheries
– National Marine Fisheries Service
777 Sonoma Avenue, Room 325
Santa Rosa, CA 95404

Re: Invitation to Participate in the Environmental Review Process for the Downtown San Francisco Ferry Terminal Expansion Project

Dear Mr. Stern:

The Federal Transit Administration (FTA), in cooperation with the San Francisco Bay Area Water Emergency Transportation Authority (WETA) is initiating the preparation of an Environmental Impact Statement and Environmental Impact Report for the proposed Downtown San Francisco Ferry Terminal Expansion Project. The proposed project expands the number of ferry gates and improves ferry patron circulation, boarding, and wayfinding in and around the Ferry Building located at the foot of Market Street in downtown San Francisco. The purpose of the project, as currently defined, is to support and expand ferry service on San Francisco Bay, as established by WETA in its Implementation and Operations Plan, and in accordance with city and regional policies to encourage transit use. The project will address deficiencies in the transportation network that impede ferry operation and ferry patron access and circulation at the Downtown San Francisco Ferry Terminal. In addition, the project will enhance emergency response capabilities to evacuate people from San Francisco and/or mobilize first responders to San Francisco via ferries if a catastrophic event occurs. The enclosed Scoping Meeting Notice and Notice of Intent provide more details.

Section 6002 of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users establishes an enhanced environmental review process for certain FTA projects, increasing the transparency of the process, as well as opportunities for participation. The requirements of Section 6002 apply to the project that is the subject of this letter. As part of the environmental review process for this project, the lead agencies must identify, as early as practicable, any other Federal and non-Federal agencies that may have an interest in the project, and invite such agencies to become participating agencies in the environmental review process. Your agency has been identified preliminarily as one that may have an interest in this project, because *the project could potentially affect hydrology and water quality, hazardous materials, biological resources, cultural resources, navigation, and bayside land uses*; accordingly, you are being extended this invitation to become actively involved as a participating agency in the environmental review process for the project.

As a participating agency, you will be afforded the opportunity, together with the public, to be involved in defining the purpose of and need for the project, as well as in determining the range of alternatives to be considered for the project. In addition, you will be asked to:

- Provide input on the impact assessment methodologies and level of detail in your agency's area of expertise;
- Participate in coordination meetings, conference calls, and joint field reviews, as appropriate; and
- Review and comment on sections of the pre-draft or pre-final environmental documents to communicate any concerns of your agency on the adequacy of the document, the alternatives considered, and the anticipated impacts and mitigation.

Federal agencies:

Your agency does not have to accept this invitation. If, however, you elect not to become a participating agency, you must decline this invitation in writing, indicating that your agency has no jurisdiction or authority with respect to the project, no expertise or information relevant to the project, and does not intend to submit comments on the project. The declination may be transmitted electronically to Debra Jones (debra.jones@dot.gov); please include the title of the official responding. In order to give your agency adequate opportunity to weigh the relevance of your participation in this environmental review process, written response to this invitation are not due until after the interagency scoping meeting scheduled for 2:00 to 4:00 p.m. on April 26, 2011, at the Bayside Conference Rooms, Pier 1, The Embarcadero, San Francisco. You or your delegate is invited to represent your agency at this meeting. Your agency will be treated as participating agency unless your written response declining such designation as outlined above is transmitted to this office not later than May 16, 2011.

Non-Federal agencies:

If you elect to become a participating agency, you must accept this invitation in writing. The acceptance may be transmitted electronically to Debra Jones (debra.jones@dot.gov); please include the title of the official responding. In order to give your agency adequate opportunity to weigh the relevance of your participation in this environmental review process, written responses to this invitation are not due until after the interagency scoping meeting, scheduled for 2:00 to 4:00 p.m. on April 26, 2011, at the Bayside Conference Rooms, Pier 1, The Embarcadero, San Francisco. You or your delegate is invited to represent your agency at this meeting. Written responses accepting designation as participating agencies should be transmitted to this office not later than May 16, 2011.

Additional information will be forthcoming during the scoping process. If you have questions regarding this invitation, please contact Debra Jones @ (415) 744-3112.

Sincerely,

Leslie T. Rogers
Regional Administrator

Attachments: Scoping Meeting Notice and Notice of Intent

Copy:
Michael Gougherty, Water Emergency Transportation Authority

U.S. Department
of Transportation
**Federal Transit
Administration**

REGION IX
Arizona, California,
Hawaii, Nevada, Guam
American Samoa,
Northern Mariana Islands

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415-744-2726 (fax)

APR 7 2011

Thomas R. Kendall
Chief of Planning Branch, SF District
U.S. Army Corps of Engineers
1455 Market Street
San Francisco, CA 94103-1399

Re: Invitation to Participate in the Environmental Review Process for the Downtown San Francisco Ferry Terminal Expansion Project

Dear Mr. Kendall:

The Federal Transit Administration (FTA), in cooperation with the San Francisco Bay Area Water Emergency Transportation Authority (WETA) is initiating the preparation of an Environmental Impact Statement and Environmental Impact Report for the proposed Downtown San Francisco Ferry Terminal Expansion Project. The proposed project expands the number of ferry gates and improves ferry patron circulation, boarding, and wayfinding in and around the Ferry Building located at the foot of Market Street in downtown San Francisco. The purpose of the project, as currently defined, is to support and expand ferry service on San Francisco Bay, as established by WETA in its Implementation and Operations Plan, and in accordance with city and regional policies to encourage transit use. The project will address deficiencies in the transportation network that impede ferry operation and ferry patron access and circulation at the Downtown San Francisco Ferry Terminal. In addition, the project will enhance emergency response capabilities to evacuate people from San Francisco and/or mobilize first responders to San Francisco via ferries if a catastrophic event occurs. The enclosed Scoping Meeting Notice and Notice of Intent provide more details.

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As a participating agency, you will be afforded the opportunity, together with the public, to be involved in defining the purpose of and need for the project, as well as in determining the range of alternatives to be considered for the project. In addition, you will be asked to:

- Provide input on the impact assessment methodologies and level of detail in your agency's area of expertise;
- Participate in coordination meetings, conference calls, and joint field reviews, as appropriate; and
- Review and comment on sections of the pre-draft or pre-final environmental documents to communicate any concerns of your agency on the adequacy of the document, the alternatives considered, and the anticipated impacts and mitigation.

Federal agencies:

Your agency does not have to accept this invitation. If, however, you elect not to become a participating agency, you must decline this invitation in writing, indicating that your agency has no jurisdiction or authority with respect to the project, no expertise or information relevant to the project, and does not intend to submit comments on the project. The declination may be transmitted electronically to Debra Jones (debra.jones@dot.gov); please include the title of the official responding. In order to give your agency adequate opportunity to weigh the relevance of your participation in this environmental review process, written response to this invitation are not due until after the interagency scoping meeting scheduled for 2:00 to 4:00 p.m. on April 26, 2011, at the Bayside Conference Rooms, Pier 1, The Embarcadero, San Francisco. You or your delegate is invited to represent your agency at this meeting. Your agency will be treated as participating agency unless your written response declining such designation as outlined above is transmitted to this office not later than May 16, 2011.

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Additional information will be forthcoming during the scoping process. If you have questions regarding this invitation, please contact Debra Jones @ (415) 744-3112.

Sincerely,

Leslie T. Rogers
Regional Administrator

Attachments: Scoping Meeting Notice and Notice of Intent

Copy:
Michael Gougherty, Water Emergency Transportation Authority

U.S. Department
of Transportation
**Federal Transit
Administration**

REGION IX
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American Samoa,
Northern Mariana Islands

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415-744-2726 (fax)

APR 7 2011

Mr. Joe LaClair
Chief Planning Officer
San Francisco Bay Conservation and Development Commission
50 California Street, Suite 2600
San Francisco, CA 94111

Re: Invitation to Participate in the
Environmental Review Process for the
Downtown San Francisco Ferry Terminal
Expansion Project

Dear Mr. LaClair:

The Federal Transit Administration (FTA), in cooperation with the San Francisco Bay Area Water Emergency Transportation Authority (WETA) is initiating the preparation of an Environmental Impact Statement and Environmental Impact Report for the proposed Downtown San Francisco Ferry Terminal Expansion Project. The proposed project expands the number of ferry gates and improves ferry patron circulation, boarding, and wayfinding in and around the Ferry Building located at the foot of Market Street in downtown San Francisco. The purpose of the project, as currently defined, is to support and expand ferry service on San Francisco Bay, as established by WETA in its Implementation and Operations Plan, and in accordance with city and regional policies to encourage transit use. The project will address deficiencies in the transportation network that impede ferry operation and ferry patron access and circulation at the Downtown San Francisco Ferry Terminal. In addition, the project will enhance emergency response capabilities to evacuate people from San Francisco and/or mobilize first responders to San Francisco via ferries if a catastrophic event occurs. The enclosed Scoping Meeting Notice and Notice of Intent provide more details.

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Sincerely,

Leslie T. Rogers
Regional Administrator

Attachments: Scoping Meeting Notice and Notice of Intent

Copy:
Michael Gougherty, Water Emergency Transportation Authority

U.S. Department
of Transportation
**Federal Transit
Administration**

REGION IX
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American Samoa,
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201 Mission Street
Suite 1650
San Francisco, CA 94105-1839
415-744-3133
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APR 7 2011

Ms. Leann Lusk
Lieutenant Commander
U.S. Coast Guard, San Francisco Sector
1 Yerba Buena Island, Bldg. 278
San Francisco, CA 94130

Re: Invitation to Participate in the Environmental Review Process for the Downtown San Francisco Ferry Terminal Expansion Project

Dear Ms. Lusk:

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APR 7 2011

Mr. Enrique Manzanilla
Director, Community and Ecosystems Division
U.S. Environmental Protection Agency
75 Hawthorne Street
San Francisco, CA 94105

Re: Invitation to Participate in the Environmental Review Process for the Downtown San Francisco Ferry Terminal Expansion Project

Dear Mr. Manzanilla: Enrique

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APR 7 2011

Mr. Brad McCrea
Regulatory Program Director
San Francisco Bay Conservation and Development Commission
50 California Street, Suite 2600
San Francisco, CA 94111

Re: Invitation to Participate in the
Environmental Review Process for the
Downtown San Francisco Ferry Terminal
Expansion Project

Dear Mr. McCrea:

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APR 7 2011

Mr. Jonathan Stern
Port of San Francisco
Pier 1, The Embarcadero
San Francisco, CA 94111

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APR 7 2011

Mr. William C. Norton
Executive Officer/Air Pollution Control Officer
Bay Area Air Quality Management District
939 Ellis Street
San Francisco, CA 94109

Re: Invitation to Participate in the Environmental Review Process for the Downtown San Francisco Ferry Terminal Expansion Project

Dear Mr. Norton:

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Additional information will be forthcoming during the scoping process. If you have questions regarding this invitation, please contact Debra Jones @ (415) 744-3112.

Sincerely,

Leslie T. Rogers
Regional Administrator

Attachments: Scoping Meeting Notice and Notice of Intent

Copy:
Michael Gougherty, Water Emergency Transportation Authority

U.S. Department
of Transportation
Federal Transit Administration

REGION IX
Arizona, California,
Hawaii, Nevada, Guam
American Samoa,
Northern Mariana Islands

201 Mission Street
Suite 1650
San Francisco, CA 94105-1839
415-744-3133
415-744-2726 (fax)

APR 18 2011

Mr. Al Storm
California Department of Fish and Game
PO Box 94244
Sacramento, CA 94244

Re: Invitation to Participate in the Environmental Review Process for the Downtown San Francisco Ferry Terminal Expansion Project

Dear Mr. Storm:

The Federal Transit Administration (FTA), in cooperation with the San Francisco Bay Area Water Emergency Transportation Authority (WETA) is initiating the preparation of an Environmental Impact Statement and Environmental Impact Report for the proposed Downtown San Francisco Ferry Terminal Expansion Project. The proposed project expands the number of ferry gates and improves ferry patron circulation, boarding, and wayfinding in and around the Ferry Building located at the foot of Market Street in downtown San Francisco. The purpose of the project, as currently defined, is to support and expand ferry service on San Francisco Bay, as established by WETA in its Implementation and Operations Plan, and in accordance with city and regional policies to encourage transit use. The project will address deficiencies in the transportation network that impede ferry operation and ferry patron access and circulation at the Downtown San Francisco Ferry Terminal. In addition, the project will enhance emergency response capabilities to evacuate people from San Francisco and/or mobilize first responders to San Francisco via ferries if a catastrophic event occurs. The enclosed Scoping Meeting Notice and Notice of Intent provide more details.

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As a participating agency, you will be afforded the opportunity, together with the public, to be involved in defining the purpose of and need for the project, as well as in determining the range of alternatives to be considered for the project. In addition, you will be asked to:

- Provide input on the impact assessment methodologies and level of detail in your agency's area of expertise;
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Federal agencies:

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Sincerely,

Leslie T. Rogers
Regional Administrator

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Michael Gougherty, Water Emergency Transportation Authority

U.S. Department
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APR 18 2011

Will Travis
Executive Director
San Francisco Bay Conservation and Development Commission
50 California Street, Suite 2600
San Francisco, CA 94111

Re: Invitation to Participate in the
Environmental Review Process for the
Downtown San Francisco Ferry Terminal
Expansion Project

Dear Mr. Travis:

The Federal Transit Administration (FTA), in cooperation with the San Francisco Bay Area Water Emergency Transportation Authority (WETA) is initiating the preparation of an Environmental Impact Statement and Environmental Impact Report for the proposed Downtown San Francisco Ferry Terminal Expansion Project. The proposed project expands the number of ferry gates and improves ferry patron circulation, boarding, and wayfinding in and around the Ferry Building located at the foot of Market Street in downtown San Francisco. The purpose of the project, as currently defined, is to support and expand ferry service on San Francisco Bay, as established by WETA in its Implementation and Operations Plan, and in accordance with city and regional policies to encourage transit use. The project will address deficiencies in the transportation network that impede ferry operation and ferry patron access and circulation at the Downtown San Francisco Ferry Terminal. In addition, the project will enhance emergency response capabilities to evacuate people from San Francisco and/or mobilize first responders to San Francisco via ferries if a catastrophic event occurs. The enclosed Scoping Meeting Notice and Notice of Intent provide more details.

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Leslie T. Rogers
Regional Administrator

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Michael Gougherty, Water Emergency Transportation Authority

U.S. Department
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**Federal Transit
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415-744-2726 (fax)

APR 18 2011

Mr. Bruce Wolfe
Executive Officer
Regional Water Quality Control Board (RWQCB)
1515 Clay Street, Suite 1400
Oakland, CA 94612

Re: Invitation to Participate in the Environmental Review Process for the Downtown San Francisco Ferry Terminal Expansion Project

Dear Mr. Wolfe:

The Federal Transit Administration (FTA), in cooperation with the San Francisco Bay Area Water Emergency Transportation Authority (WETA) is initiating the preparation of an Environmental Impact Statement and Environmental Impact Report for the proposed Downtown San Francisco Ferry Terminal Expansion Project. The proposed project expands the number of ferry gates and improves ferry patron circulation, boarding, and wayfinding in and around the Ferry Building located at the foot of Market Street in downtown San Francisco. The purpose of the project, as currently defined, is to support and expand ferry service on San Francisco Bay, as established by WETA in its Implementation and Operations Plan, and in accordance with city and regional policies to encourage transit use. The project will address deficiencies in the transportation network that impede ferry operation and ferry patron access and circulation at the Downtown San Francisco Ferry Terminal. In addition, the project will enhance emergency response capabilities to evacuate people from San Francisco and/or mobilize first responders to San Francisco via ferries if a catastrophic event occurs. The enclosed Scoping Meeting Notice and Notice of Intent provide more details.

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Leslie T. Rogers
Regional Administrator

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Copy:
Michael Gougherty, Water Emergency Transportation Authority

U.S. Department
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APR 18 2011

Mr. Ryan Olah
Coast Bay Delta Chief
U.S. Fish and Wildlife Service (FWS)
2800 Cottage Way, Room W2605
Sacramento, CA 95828

Re: Invitation to Participate in the Environmental Review Process for the Downtown San Francisco Ferry Terminal Expansion Project

Dear Mr. Olah:

The Federal Transit Administration (FTA), in cooperation with the San Francisco Bay Area Water Emergency Transportation Authority (WETA) is initiating the preparation of an Environmental Impact Statement and Environmental Impact Report for the proposed Downtown San Francisco Ferry Terminal Expansion Project. The proposed project expands the number of ferry gates and improves ferry patron circulation, boarding, and wayfinding in and around the Ferry Building located at the foot of Market Street in downtown San Francisco. The purpose of the project, as currently defined, is to support and expand ferry service on San Francisco Bay, as established by WETA in its Implementation and Operations Plan, and in accordance with city and regional policies to encourage transit use. The project will address deficiencies in the transportation network that impede ferry operation and ferry patron access and circulation at the Downtown San Francisco Ferry Terminal. In addition, the project will enhance emergency response capabilities to evacuate people from San Francisco and/or mobilize first responders to San Francisco via ferries if a catastrophic event occurs. The enclosed Scoping Meeting Notice and Notice of Intent provide more details.

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Leslie T. Rogers
Regional Administrator

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Michael Gougherty, Water Emergency Transportation Authority

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**Federal Transit
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201 Mission Street
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San Francisco, CA 94105-1839
415-744-3133
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APR 18 2011

Ms. Korie Schaeffer
Fishery Biologist
National Oceanographic and Atmospheric Administration Fisheries
– National Marine Fisheries Service (NMFS)
777 Sonoma Ave., Room 325
Santa Rosa, CA 95404

Re: Invitation to Participate in the
Environmental Review Process for the
Downtown San Francisco Ferry Terminal
Expansion Project

Dear Ms. Schaeffer:

The Federal Transit Administration (FTA), in cooperation with the San Francisco Bay Area Water Emergency Transportation Authority (WETA) is initiating the preparation of an Environmental Impact Statement and Environmental Impact Report for the proposed Downtown San Francisco Ferry Terminal Expansion Project. The proposed project expands the number of ferry gates and improves ferry patron circulation, boarding, and wayfinding in and around the Ferry Building located at the foot of Market Street in downtown San Francisco. The purpose of the project, as currently defined, is to support and expand ferry service on San Francisco Bay, as established by WETA in its Implementation and Operations Plan, and in accordance with city and regional policies to encourage transit use. The project will address deficiencies in the transportation network that impede ferry operation and ferry patron access and circulation at the Downtown San Francisco Ferry Terminal. In addition, the project will enhance emergency response capabilities to evacuate people from San Francisco and/or mobilize first responders to San Francisco via ferries if a catastrophic event occurs. The enclosed Scoping Meeting Notice and Notice of Intent provide more details.

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Sincerely,

Leslie T. Rogers
Regional Administrator

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Michael Gougherty, Water Emergency Transportation Authority

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201 Mission Street
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415-744-3133
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APR 18 2011

Nanci Smith
California State Lands Commission
100 Howe Ave., Suite 100-South
Sacramento, CA 95825-8202

Re: Invitation to Participate in the
Environmental Review Process for the
Downtown San Francisco Ferry Terminal
Expansion Project

Dear Ms. Smith:

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Sincerely,

Leslie T. Rogers
Regional Administrator

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Copy:
Michael Gougherty, Water Emergency Transportation Authority

APPENDIX E
FACT SHEET

Downtown San Francisco Ferry Terminal Expansion Project

Fact Sheet

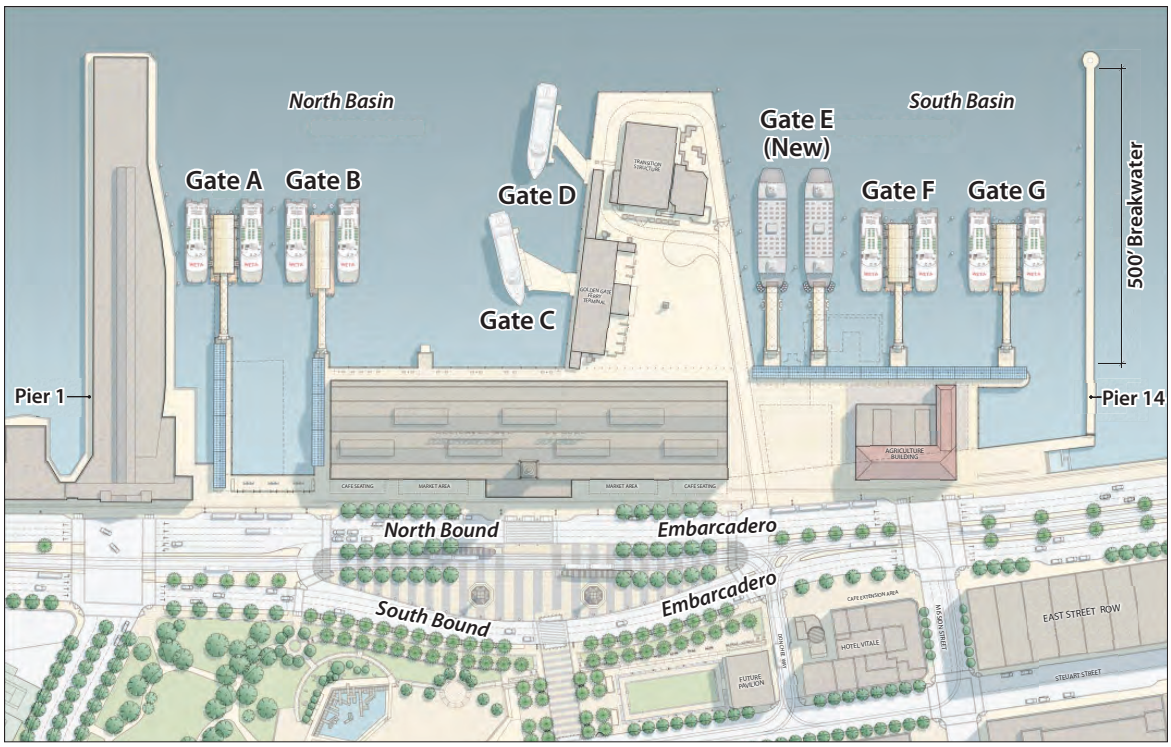
April 2011

The San Francisco Bay Area Water Emergency Transportation Authority (WETA) is proposing expansion and improvements to the Downtown San Francisco Ferry Terminal at the Port of San Francisco Ferry Building (see project area figure). The project would expand the number of ferry gates, improve pedestrian circulation and ferry patron boarding, and enhance emergency response capabilities to evacuate people from San Francisco in the event of a major catastrophic event.

The project is located in the northeastern section of San Francisco, California, at the San Francisco Ferry Building, situated at the foot of Market Street. The study area encompasses Port of San Francisco property between Pier 1 on the north and Pier 14 on the south, and includes the Ferry Building, ferry gates, and the Ferry Plaza. The Downtown San Francisco Ferry Terminal currently accommodates six ferry routes serving more than 10,000 passengers with approximately 130 ferry arrivals and departures daily. The proposed project would make improvements to gates and boarding areas to accommodate anticipated increases in ferry ridership as new ferry services from downtown San Francisco to Berkeley, Treasure Island, Hercules, Richmond, Redwood City, Martinez, and Antioch are introduced between 2014 and 2030.

Project Area

The planned improvements build on improvements that were completed by the Port of San Francisco in 2003 (Phase 1). Phase 2 of the Downtown San Francisco Ferry Terminal Expansion Project would begin in 2014 and be completed by 2017, and would consist of demolition of Pier ½ and Pier 2, construction of three new ferry gates, installation of amenities such as weather-protected areas for queuing, improvements to pedestrian circulation, and filling of the lagoon for future use as a staging area for evacuees in the event of a major catastrophe. Full build-out of the proposed improvements is contingent on potential ridership demand at full build-out of the proposed Treasure Island redevelopment, expected to occur sometime between 2020 and 2030. A preliminary sketch of proposed improvements in shown below.



Preliminary Sketch of Proposed Improvements

Environmental Review

As the federal and local Lead Agencies, respectively, the Federal Transit Administration and WETA are preparing a joint Environmental Impact Statement/ Environmental Impact Report (EIS/EIR) to satisfy the requirements of the National Environmental Policy Act and the California Environmental Quality Act. The EIS/EIR will address potential impacts to land use, development potential, displacements, historic resources, visual and aesthetic qualities, air quality, noise and vibration, dredging and Bay fill requirements, hazardous materials resulting from demolition and construction activities, traffic circulation and transportation linkages, pedestrian circulation, safety, security, and emergency response, Bay habitat, and cumulative impacts. The environmental analysis may reveal that the proposed project will not affect, or affect substantially, many at those areas. However, if any adverse impacts are identified, measures to avoid, minimize or mitigate those adverse impacts will be proposed.

Opportunities for Public Involvement

A comprehensive public involvement program for public and interagency involvement will be developed for the project and posted on WETA's website: http://www.watertransit.org. The public involvement program will include maintaining the project webpage on the WETA website, and outreach to local officials, community and civic groups, and the public. Scoping meetings will be held in April 2011 to obtain comments on the scope of the environmental analysis. Comments will also be accepted by mail. When the environmental analysis is complete, the document will be circulated for public review and comment prior to finalizing it.

Contact Information:

Mike Gougherty
WETA Project Manager

San Francisco Bay Water Emergency Transportation Authority
Pier 9, Suite 111
The Embarcadero
San Francisco, CA, 94111.

(415) 364-3189

www.watertransit.org

APPENDIX F
BAY CROSSINGS ARTICLE

[San Francisco Weather Forecast]

Search: GO

WETA Proposes Expanding Downtown S.F. Ferry Terminal

The San Francisco Bay Area Water Emergency Transportation Authority (WETA) is proposing expansion and improvements to the Downtown San Francisco Ferry Terminal at the Ferry Building.

Above is an aerial image of the San Left: Francisco Ferry Building and the gates as they look today. The artist rendering on the right shows the proposed expansion project.

Published: April 1, 2011

The San Francisco Bay Area Water Emergency Transportation Authority (WETA) is proposing expansion and improvements to the Downtown San Francisco Ferry Terminal at the Ferry Building. The project, which will soon undergo an environmental impact review, would expand the number of ferry gates, improve pedestrian circulation and ferry patron boarding, and enhance emergency response capabilities to evacuate people from San Francisco in the event of a major catastrophic event.

The objectives of this project include:

- Accommodate WETA's projected increase in ferry ridership and related ferry arrivals and departures from the Downtown San Francisco Ferry Terminal;
- Provide a viable alternative mode of transportation that accommodates projected increases in transbay trips, and help alleviates congestion over the Bay Bridge and through the BART Transbay Tube;
- Address WETA's and the Port of San Francisco's emergency response needs;
- Establish a circulation plan and improved signage that provides clear pedestrian routes for ferry to bus and ferry to rail transfers, as well as safe routes for bikes, emergency vehicles, and delivery trucks to enter, park and exit the area;
- Provide necessary landside improvements, such as designated weather-protected areas for waiting and queuing, ticket machines and fare collection equipment, improved lighting, and improved boarding and arrival/departure information to serve ferry patrons and to enhance the Ferry Building as the central point of embarkation for ferries on San Francisco Bay; and
- Enhance the area's public access and open space with design features that create attractive, safe daytime and nighttime public spaces for both ferry patrons and other users of the Ferry Building area.

CURRENT ISSUE

June 2011

LATEST NEWS

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» America's Cup to Revolutionize Live Sports Coverage
» Watching It Grow
» 80 New Electric-Vehicle Charging Stations Coming to S.F.
» Increasing Water Quality and Quality of Life, One Block at a Time

The planned improvements build on improvements that were completed by the Port of San Francisco in 2003. The first phase of this project, which would begin in 2014 and be completed by 2017, would consist of demolition of Pier ½ and Pier 2, construction of three new ferry gates, installation of amenities such as weather-protected areas for queuing, improvements to pedestrian circulation, and filling of the lagoon for future use as a staging area for evacuees in the event of a major catastrophe. Full build-out of the proposed improvements is contingent on potential ridership demand at full build-out of the proposed Treasure Island redevelopment, expected to occur sometime between 2020 and 2030.

Environmental Review

As the federal and local lead agencies, respectively, the Federal Transit Administration and WETA are preparing a joint Environmental Impact Statement/Environmental Impact Report (EIS/EIR) to satisfy the requirements of the National Environmental Policy Act and the California Environmental Quality Act.

A Notice of Preparation and Notice of Intent have been prepared and are being circulated by the Port and FTA for the purpose of defining the scope and content of the EIS/EIR. A 45-day review period on these documents will be held from April 1 through May 16, 2011.

A public meeting will be held on Tuesday, April 26, at the Bayside Conference Rooms, Pier 1 at the Embarcadero. The purpose of the meeting is to present information regarding the environmental review process, alternatives considered, and opportunities for public comment on the scope of the environmental analysis to be conducted for this project. An Open House will begin at 5:30 p.m., with a formal presentation beginning at 6:15 p.m. A resource agency staff meeting (also open to the public) will take place on the same day and at the same location from 2 – 4 p.m.

If you are not able to attend the Scoping Meeting but would like to provide written comments for consideration in the EIS/EIR, please send to: Mike Gougherty, WETA Project Manager, San Francisco Bay Water Emergency Transportation Authority, Pier 9, Suite 111, The Embarcadero, San Francisco, CA, 94111. Comments must be received by May 16 to be considered.

Once the draft environmental analysis is complete, the document will be circulated for public review and comment. Additional information about the proposed project—including the documents discussed in this article—is available on WETA's website at www.watertransit.org.

» Congress Considers Exempting Pesticides from Clean Water Act

» I Want You: To Help Protect the Bay-Delta

» WATERFRONT ACTIVITIES JUNE 2011

» Music and Dance Enliven Jack London Square

» Fauves and Fillies

» A Unique Museum in the Heart of the Delta

» Around the bay in June 2011

APPENDIX G
PORT AND WETA OUTREACH INFORMATION

Downtown San Francisco Ferry Terminal Expansion Project

Sponsored by the Federal Transit Administration and the
San Francisco Bay Area Water Emergency Transportation Authority

Public Scoping Meeting on the Preparation of an EIS/EIR

Tuesday, **April 26**, 2011 **5:30 pm** at Pier 1, Bayside Conference Rooms

Learn more at *www.watertransit.org*

ABOUT US

GO

DOWNTOWN SAN FRANCISCO FERRY TERMINAL EXPANSION PROJECT

About | **Environmental Review** | **Opportunities for Public Involvement** | **Downloads and Public Notices**

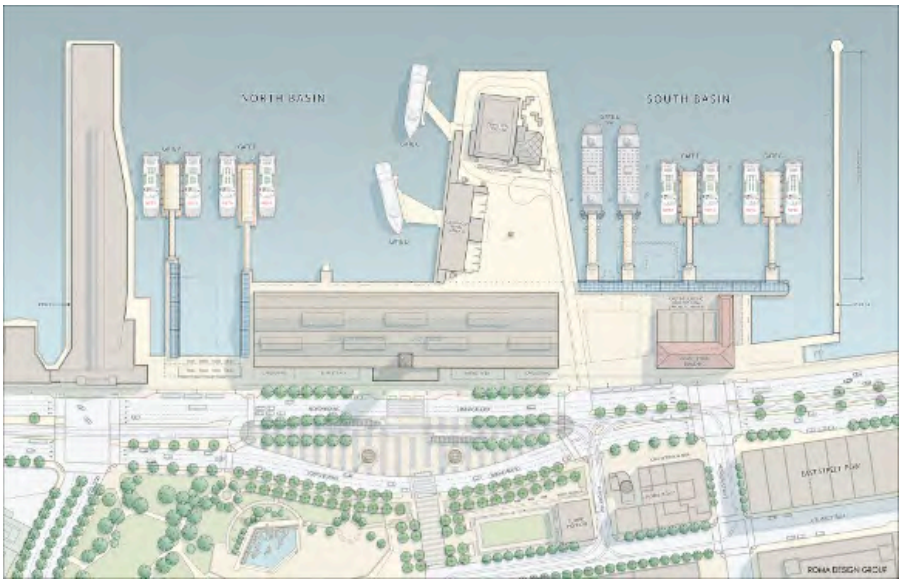
ABOUT THE PROJECT

The San Francisco Bay Area Water Emergency Transportation Authority (WETA) is proposing expansion and improvements to the Downtown San Francisco Ferry Terminal at the Port of San Francisco Ferry Building (see project area figure below). WETA and the Port have entered into a Memorandum of Understanding (MOU) to undertake a coordinated planning effort for the Downtown San Francisco Ferry Terminal Expansion project in accordance with the Port's objectives for stewardship of the San Francisco waterfront and WETA's mission to provide ferry service and emergency operations (see MOU attached **below**). The project would expand the number of ferry gates, improve pedestrian circulation and ferry patron boarding, and enhance emergency response capabilities to evacuate people from San Francisco in the event of a major catastrophic event.

The project is located in the northeastern section of San Francisco, California, at the San Francisco Ferry Building, situated at the foot of Market Street. The study area encompasses Port of San Francisco property between Pier 1 on the north and Pier 14 on the south, and includes the Ferry Building, ferry gates, and the Ferry Plaza. The Downtown San Francisco Ferry Terminal currently accommodates six ferry routes serving more than 10,000 passengers with approximately 130 ferry arrivals and departures daily. The proposed project would make improvements to gates and boarding areas to accommodate anticipated increases in ferry ridership as new ferry services from downtown San Francisco to Berkeley, Treasure Island, Hercules, Richmond, Redwood City, Martinez, and Antioch are introduced between 2014 and 2030.

The planned improvements build on improvements that were completed by the Port of San Francisco in 2003 (Phase 1). Phase 2 of the Downtown San Francisco Ferry Terminal Expansion Project would begin in 2014 and be completed by 2017, and would consist of demolition of Pier 1/2 and Pier 2, construction of three new ferry gates, installation of amenities such as weather-protected areas for queuing, improvements to pedestrian circulation, and filling of the

lagoon for future use as a staging area for evacuees in the event of a major catastrophe. Full build-out of the proposed improvements is contingent on potential ridership demand at full build-out of the proposed Treasure Island redevelopment, expected to occur sometime between 2020 and 2030. A preliminary sketch of proposed improvements in shown below.



ENVIRONMENTAL REVIEW

As the federal and local Lead Agencies, respectively, the Federal Transit Administration and WETA are preparing a joint Environmental Impact Statement/Environmental Impact Report (EIS/EIR) to satisfy the requirements of the National Environmental Policy Act and the California Environmental Quality Act. A Notice of Intent (NOI) and Notice of Preparation (NOP) have been prepared and are being circulated by FTA and WETA for the purpose of defining the scope and content of the EIS/EIR. The EIS/EIR will address potential impacts to land use, development potential, displacements, historic resources, visual and aesthetic qualities, air quality, noise and vibration, dredging and Bay fill requirements, hazardous materials resulting from demolition and construction activities, traffic circulation and transportation linkages, pedestrian circulation, safety, security, and emergency response, Bay habitat, and cumulative impacts. The environmental analysis may reveal that the proposed project will not affect, or affect substantially, these areas. However, if any adverse impacts are identified, measures to avoid, minimize or mitigate those adverse impacts will be proposed.

OPPORTUNITIES FOR PUBLIC INVOLVEMENT

A comprehensive public involvement program for public and interagency involvement will be developed for the project and made available on this website. The public involvement program will include maintaining this webpage and outreach to local officials, community and civic groups, and the public. Comments on the scope of the environmental analysis for this project will be accepted during public scoping meetings held on April 26, 2011, or may be submitted in writing to WETA Project Manager, Mike Gougherty, by May 16, 2011. When the environmental analysis is complete, the document will be circulated for public review and comment prior to finalizing it.

DOWNLOAD THE NOTICE OF PREPARATION (NOP)

Notice of Preparation (PDF, 406KB)

DOWNLOAD THE NOTICE OF INTENT (NOI) TO PREPARE AN ENVIRONMENTAL IMPACT STATEMENT (EIS)

Notice of Intent (PDF, 35KB)

DOWNLOAD THE NOTICE OF PUBLIC SCOPING MEETING (APRIL 26, 2011)

Notice of Public Scoping Meeting (PDF, 183KB)

DOWNLOAD THE MOU BETWEEN WETA AND THE PORT OF SAN FRANCISCO

WETA/Port of San Francisco Memorandum of Understanding (PDF, 2.02MB)

DOWNLOAD A COPY OF THE DOWNTOWN TERMINAL EXPANSION PROJECT FACT SHEET

Fact Sheet (PDF, 3.02MB)

top ◊

APPENDIX H
SCOPING MEETING SIGN-IN SHEET

WETA

April 26, 2011 Scoping Meeting
SIGN-IN SHEET

NAME	ADDRESS	Telephone or e-mail address
ERNESTINE WEISS	440 DAVIS CT. #714, SF 94111	(391-6912)
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John Sindzinski	WETA	
TOM DOUGHERTY	B+G, MMP	
CAROL LASTRUCCI	440 DAVIS CT., #1213	415-956-1460
VERNE D. FINKS	550 [illegible] ST # 2	-397-7781
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Aida Villagracia		vi88LL88@hotmail.com

APPENDIX I
SCOPING MEETING TRANSCRIPTS

SCOPING MEETING

DOWNTOWN SF FERRY TERMINAL EXPANSION PROJECT

---

at

Bayside Conference Rooms

Pier One

San Francisco, California

1st Session

Reported by:

CHERIE L. LUBASH

JAN BROWN & ASSOCIATES

WORLDWIDE DEPOSITION AND VIDEOGRAPHY SERVICES

701 Battery Street, 3rd Floor

San Francisco, California 94111

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Guest, JOSHUA H. WIDMANN, Associate Planner, Golden Gate Bridge Highway & Transportation District, 1011 Andersen Drive, San Rafael, CA 94901-5318
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(On the record at 2:14 p.m.)

MR. SINDZINSKI: Hi, my name is John Sindzinski. I'm the planning and development manager with the Water Emergency Transportation Authority. So today we have present besides WETA staff, which include the project manager, Mike Gougherty, we also have Chad Mason of the planning staff. In attendance also Boris Dramov with ROMA, the project designer; and from URS we have Julie Bixby and Ian Austin. And last but not least, our partner here Jamie Hurley with Port of San Francisco.

The purpose of today's meeting is to solicit comments from resources agencies concerning the environmental impacts of the proposed expansion of the Downtown Ferry Terminal. We would have FTA here, but evidently the FTA representative has been delayed. FTA is our NEPA lead agency partner, and it's the Federal Transit Administration. We are the lead agency under CEQA.

Also note that we have a court reporter here today who will be transcribing your comments. If you wish to speak, we will take your questions, and if you have comments we will at that point in time take your comments and move from a more colloquial discussion into a formal comment period.

So maybe I'll speak a little about FTA's role in this. FTA's involvement is, of course, a funding partner to WETA on the project. We'll be doing a joint CEQA/NEPA document. The NEPA side of the document will include coordination with the Federal Resource Agency, which were invited to today's meeting.

And then the last thing I want to say is I'm going to turn it over to Mike and let him carry forward with an overview of the project.

MR. GOUGHERTY: Thanks, John.

I'm Mike Gougherty, I'm the project manager for WETA on the Downtown San Francisco Ferry Terminal Expansion Project. Before we get into opening up the meeting for scoping comments, I just wanted to give you a brief background on the Downtown Ferry Terminal Expansion Project.

The purpose of the project is to accommodate expansion of ferry service to downtown San Francisco and projected increases in ridership. On the water side that will entail construction of new berthing floats to support new service coming into San Francisco, as well as land side improvements in the Ferry Building area to support additional waiting and queuing areas required to support the additional ridership.

A secondary, but equally important, objective is to enhance the emergency capabilities of WETA and the Port and having the Ferry Building area serve as a potential area for staging emergency evacuations in the event of a regional disaster.

Taking a look at the project area here, you'll see to the north the project area is roughly bounded Pier 1; on the east the Embarcadero promenade; to the north the Pier 14 breakwater and public access; and obviously on the east bounded by the Bay. The entire project area is under the land use jurisdiction of the Port. As such, we have been working in close collaboration with the Port to develop the planning environmental clearance of the WETA project, taking into account the multiple uses within the project area, namely the Marketplace in the Ferry Building, activities along the ferry plaza, the Farmers' Market, general public access to the waterfront, as well as ferry service operated by the Golden Gate Ferry, Golden Gate Bridge and Transportation District.

In addition to the multiple uses, the Port and WETA are working together to make sure that this project is compatible with the future projects in the project area, which would include Golden Gate and their proposed rehabilitation of their existing berthing

floats. There are BART security improvements taking place on the eastern edge of the ferry plaza. The Port is contemplating the future rehabilitation and re use of the Agriculture Building. And additionally the Port is also undertaking design efforts to improve areas at the ferry plaza that are currently in disrepair.

Moving along to a plan view of the existing conditions, you can see the improvements that took place as Phase 1 of the Downtown Ferry Terminal Project. These were undertaken by the Port in 2003 and include the construction of the existing Gate D, which supports the Vallejo and Tiburon service, as well as Gate E, which supports Alameda, Oakland and Harbor Bay services.

In addition to the construction of these two new floats, there were several improvements made to the deck and promenade areas to support passenger circulation required to operate the services out of these floats.

Part of the Phase 1 project is the future expansion of the ferry terminal to support additional services. Those efforts were not included in the environmental analysis conducted at the time. In a larger, in a general way WETA is picking up where those efforts left off, proposing a Phase 2 and Phase 3 of

expansion of the Downtown Ferry Terminal, which ultimately results in build out of the Downtown Ferry Terminal facility.

Taking a look at Phase 2 of the proposed WETA project, which is scheduled to be constructed between 2014 and 2017, you'll see that there are three new ferry gates added along the water side as well as several land side improvements to support additional pedestrian waiting and queuing areas. In general the improvements are clustered in two primary areas. We have the north basin between Pier 1 and the south side of the ferry plaza, as well as the south basin between Pier 14 and to the north side of the ferry plaza.

Taking a look at each of those areas specifically, you'll see in the north basin we're proposing to add Gate A which would be required to ferry services to San Francisco from Berkeley and Richmond. Part of those improvements would entail the removal of Pier 1/2; improvements to the promenade on the marginal wharf between Pier 1 and the Ferry Building; and additional improvements, namely the addition of weather shelters to protect customers from inclement weather as well as promote better organization of the queuing areas and waiting spaces.

Looking at the proposed improvements in the

south basin you'll see in addition to existing Gate E, the project is proposing to add Gate F and Gate G. These two new berthing floats required to support future Treasure Island service as well as to provide additional berthing capacity and potential layover capacity for other services that are contemplated as part of WETA's expansion plans as well at as existing services.

On the land side you'll see there are several improvements made to deck areas; namely the covering of the currently open lagoon area, in addition to the expansion of promenade and deck spacing to the south of the Ag Building, as well as the expansion of the promenade along the Bay side over here. That additional deck space is required in order to support the day-to-day passenger circulation of in regular service as well as provide an adequate amount of space for WETA emergency response functions.

The other land side improvement you'll see is the provision of weather sheltering along the promenade to the east of the Ag Building. In a similar fashion that's proposed in the north basin for Gate A and Gate B. While the Ag Building is shown in the plans here, it's not part of the WETA project, but again, in the collaborative spirit of supporting that WETA

undertaking, we want to make sure our project is compatible with any future project to rehabilitate and reuse the Ag Building.

The third phase of the expansion which would reflect the build-out of the Downtown Ferry Terminal Facility is generally projected to occur, if at all, between 2020 and 2030. This would entail the construction of a bow-loading berthing facility at the existing Gate E. The larger bow-loading vessels would be required to support ridership projections. That assumes full build-out of the Treasure Island redevelopment. There are certain studies that show side-loading vessels would be unable to handle the projected volume of ferry passengers. Again, this phase is contingent upon full build-out of Treasure Island and the necessary ridership demand from that build-out.

So the CEQA/NEPA analysis being undertaken by WETA and the FTA is going to consider the entire build-out of the project, so the improvements that were considered in Phase 2 and Phase 3 in the north basin and Phase 3 in a the south basin. This is viewed as the maximum impact of the project and will be the basis for analysis. In WETA and URS preliminary investigations we'd like to identify with you

environmental issues of specific concern that will be addressed in the draft EIR. Of particular interest are potential circulation impacts regarding pedestrian and traffic flows; aquatic resource impacts, there will be in-water work involving demolition of existing piers, pile driving, and some amount of dredging associated with the project. Also we'll be looking at the cumulative impacts of the projects as they relate to other projects in the waterfront area, including the America's Cup Cruise Terminal Project.

Schedule wise we're currently in the scoping period for EIR/EIS right now. We have a scoping period that extends through May 16th. We're anticipating to have a draft EIR prepared for release and public comment by early 2012. Once comments have been reviewed on the draft, we are anticipating a final EIR that addresses comments received on the draft ready for release by fall 2012.

At this point I'd be happy to address any questions as they specifically relate to the presentation before opening up for formal comments on the scope of the EIR/EIS; Josh?

MR. WIDMANN: Can you -- I got the time line for Phase 2, 2014 through 2017 and Phase 3, 2020 to 2030. But can you just refresh me on the Phase 1? Is

that happening regardless?

MR. GOUGHERTY: Sorry if it wasn't clear in the presentation. Phase 1 really reflects the existing conditions. So Phase 1 was a project that was undertaken and completed by the Port in 2003 and really entailed the construction of the existing Gate B and Gate E that support the Tiburon/Vallejo service and Alameda/Oakland service.

MR. WIDMANN: And then I saw Gate E that was going to be Phase 3. If you could just refresh me on the time line for Gate E, F and G.

MR. GOUGHERTY: Yeah. So we have our existing conditions in the slide. The existing Gate B and Gate E --

MR. WIDMANN: So E doesn't change, well, except for the western part?

MR. GOUGHERTY: In Phase 2 --

MR. WIDMANN: E is there.

MR. GOUGHERTY: In Phase 2 we're proposing to add Gate A to support the Richmond/Berkeley services in the north basin. In the south basin we would add Gate F and Gate G. From an operational standpoint, we're currently projecting that once these two gates are active in the south basin, the Alameda, Oakland, Harbor Bay services that currently operate out of Gate E would

move to Gate F. The Treasure Island service, after the of Treasure Island redevelopment, would operate out of Gate E, and those services are projected to have the highest ridership demand, so it made sense from an operational standpoint to have them in closer proximity to the Ferry Building amenities. Gate G would be built to provide spare berthing capacity, layover berthing capacity, and berthing capacity for other services that are currently in various stages of development.

MR. WIDMANN: And the bow-loading would be Phase 3?

MR. GOUGHERTY: So Phase 3 is projected to occur sometime between 2020 and 2030 depending on full build-out of the Treasure Island redevelopment. Certain studies associated with the environmental document for that project have demonstrated projected ridership demands that would require a larger bow-loading vessels to meet the head ways that support the service. So once that threshold is met WETA would propose to replace the existing Gate E with a bow-loading facility to support the larger vessels to Treasure Island.

MR. WIDMANN: Was there -- was there analysis done on -- are you going to talk about the transportation aspect, total number of trips per day in

each phase? Total number of crossings?

MR. AUSTIN: Yes, there would be ridership projections.

MR. GOUGHERTY: Part of a supportive effort of this project, WETA is currently undertaking an update of its ridership forecast model that was prepared in the early 2000s. We anticipate having updated ridership projections for 2035 in the coming months, and that data will be used and incorporated into the CEQA/NEPA evaluation of this project.

MR. WIDMANN: Do you have an estimate currently of just the scale, the magnitude of operations that's going to be -- the level this is going to be expanded, is this going to be 3 times, 10 times?

MR. GOUGHERTY: In terms of ridership?

MR. WIDMANN: Ridership or crossings, just a general estimate.

MR. GOUGHERTY: In can be in WETA's implementation and operations plan. The expansion of water transit called for or was projected to result in a tripling of ferry ridership over existing levels.

MR. WIDMANN: Does that include Golden Gate Ferry?

MR. GOUGHERTY: Based on the implementation operations find from 2003, they're projecting a

tripling of existing ferry ridership.

MR. WIDMANN: By 2035?

MR. GOUGHERTY: That was for 2025. Those numbers are being updated as part of our ridership forecast.

MR. WIDMANN: And what is the current total number? I think it's 10,000 at the moment?

MR. AUSTIN: It's roughly 10,000 at the moment.

MR. GOUGHERTY: Did you have any additional questions kind of concerning the concept design before we move into --

MR. WIDMANN: No, I have no --

MR. GOUGHERTY: -- the formal scoping --

MR. WIDMANN: No further questions.

MR. GOUGHERTY: Thank you.

At this point I'd like to provide everyone, Josh, an opportunity to verbally express comments concerning the scope of the environmental impact report statement analysis. Not really an opportunity to engage in a question and answer period, it's more stating comments regarding the scope of the project for the record. Those can be submitted verbally today or in writing today, or alternatively via mail or e-mail through the end of the comment period, which will be completed on May 16th.

So on that note --

MR. WIDMANN: What's the email address?

MR. AUSTIN: It's on here.

MR. GOUGHERTY: Is it in the scoping meeting notes?

MR. AUSTIN: It just says watertransit.org.

MR. WIDMANN: We can write you a letter. I see the address.

MR. AUSTIN: It's on the board.

MR. GOUGHERTY: So we'll make sure you have the contact information. You can submit to me at gougherty@watertransit.org. We'll make sure we get you the contact information.

MR. WIDMANN: Got it.

MS. FEENEY: Mike, your address is on this comment card.

MR. WIDMANN: A question I guess is for the design concept, there are no -- if it is modified, I'm just curious to know what things are actually, what can change from this proposal in terms of -- we're just concerned about access to our facilities from the Embarcadero and that pathway on the south side of the Ferry Building and --

MR. GOUGHERTY: Well, we'll certainly be looking at circulation impacts, and any level of

specificity you can give us in terms of detailed things to look at would be helpful so we could go forward.

MR. AUSTIN: Josh, you were mentioning bicycles. Is the bicycle of more concern or the people?

MR. WIDMANN: They're equal. I mean, it doesn't seem like you have gotten down to the details of bike parking or anything. Is that something that is going to be considered?

MR. GOUGHERTY: We're going to consider that in the process of evaluating the circulation impacts.

MR. SINDZINSKI: Let's stick to comments.

MR. WIDMANN: I don't think there's anything else.

MR. GOUGHERTY: Okay. Well again, feel free to submit comments in writing by mail or email. May 16th is the end of our scoping period.

Unless there are any other questions or follow-up information. Thank you for coming today.

(Off the record at 2:39 p.m.)

I do hereby certify that the foregoing meeting was taken at the time and place therein stated; that the testimony of said parties was reported by me, a shorthand reporter and a disinterested person, and was under my supervision thereafter transcribed into typewriting.

CHERIE L. LUBASH

SCOPING MEETING

DOWNTOWN SF FERRY TERMINAL EXPANSION PROJECT

---

at

Bayside Conference Rooms

Pier One

San Francisco, California

2nd Session

Reported by:

CHERIE L. LUBASH

JAN BROWN & ASSOCIATES

WORLDWIDE DEPOSITION AND VIDEOGRAPHY SERVICES

701 Battery Street, 3rd Floor

San Francisco, California 94111

APPEARANCES

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(On the record at 5:41 p.m.)

MR. SINDZINSKI: So I'm John Sindzinski, I'm with the Water Emergency Transportation Authority. I'm manager of planning, and I'm sort of MC tonight, but then I get to sit down and let the real work be done by the real staff.

For those of you who don't know us, the Water Emergency Transportation Authority was created by the state legislature originally as the Water Transit Authority to expand commuting on the San Francisco Bay with ferry transit services. We have been added and transformed a bit to the WETA and are in the process of building a ferry terminal in South San Francisco, the most resent ferry terminal since Gates B and E, built in --

MR. AUSTIN: Well, completed in 2003

MR. SINDZINSKI: So a few weeks ago to say the least. We're also working on the environmental process in Berkeley, and we hope to be in construction of that project before 2013. And we're also working with the City on its redevelopment plans for Treasure Island, which has a lot to do with this project. This project is principally concerned with the expansion of ferry terminal services at the Ferry Building and recognition of the fact that as we bring on new services from these

outlying communities, we'll need more facilities in downtown San Francisco to accommodate our boats and the passengers.

So tonight's meeting is the public kick-off of what's called scoping. Scoping is a process in the California Environmental Quality Act and in the federal act that provides public input to what the potential impacts of our project may be. We will record those concerns, and our environmental team will do an assessment of your concerns.

Tonight we have a whole cast of staff and consultants. Mike Gougherty is our project manager for this particular project.

Over there to my far right is Chad Mason, who is also with WETA staff.

We have Ian Austin with URS who's doing the environmental work for the project.

We also have Jamie Hurley, he's with the Port of San Francisco. We have a memorandum of agreement with the Port to walk through this whole process because we have certain responsibilities as the developer of the project, but the Port, as the land owner, has their own responsibilities. And this is the way we're approaching most of our projects now, so you have to do it in a partnership way with the land

owners.

And then last, but certainly not least, is Boris Dramov, who is the architect of this endeavor and the designer.

Tonight's process is to begin both the CEQA and NEPA. This is federal and state environmental process. Under NEPA we have the Federal Transit Administration, which is the lead agency. They're involved because they're providing some funding for the project, and before we can secure that funding, we have to meet the federal environmental requirements. So sometimes for people in California there's a little confusion between CEQA and NEPA, and that's why we have the brain trust of Julie, who I failed to introduce, and Ian to walk us through as necessary the intricacies of how those two particular environmental rules effect the development of the assessment. So they're here to guide us through that.

But FTA is our federal partner, we're the state, for the CEQA process we are the lead agency. We also have a court reporter who will be transcribing everything this evening.

Our general process will be to open up the meeting after Mike does an overview of the project just for some questions and answers. You might have some

burning questions, what is this project all about, why are we doing it, what does this mean, that we would like to try to answer. Everyone can hear the answers to the extent we can answer those. But then we'll move into a formal comment period. At that time, we'll ask you to make your comments. We will not answer questions during the comment period because that's really your opportunity to make comments, which as I said, will be recorded in both the CEQA and NEPA documents and will have to be specifically addressed throughout those documents.

With no further -- one last thing, if you plan on speaking, could you fill out one of these little blue cards? If you prefer not to speak to us with comments and would just like to send them in, you can do it on one of these white cards. We can also accept comments through carrier pigeon, e-mail, and almost any way that a human being could communicate to other human being. Thank you.

MR. GOUGHERTY: Thanks, John.

So we have some concept designs on our boards here, but I'd like to just take the opportunity to walk you through a little detail of what we're proposing as part of the Downtown San Francisco Ferry Terminal Expansion Project. I think John touched on the primary

goals of the project. First and foremost to accomodate not only the expansion of new services to the downtown San Francisco Ferry Terminal, but also a projected increase in ridership. A secondary, but equally important goal is to address both to emergency response needs of the Port and WETA in providing and using the Ferry Building as an emergency staging area in the event of a required evacuation.

Just to define our project area, here is the Ferry Building area bounded on the north by Pier 1,u To the west by the Embarcadero promenade, the south Pier 14 breakwater public access area, and the east San Francisco Bay. The entire project area is within the land use jurisdiction of the Port. As such, we are working in close partnership with the Port as we undertake the design project as well as the CEQA and NEPA environmental clearance.

You can see within the project area there are really a multitude of uses beyond just the Ferry Terminal. The Ferry building supports a marketplace; on the ferry plaza we have the Farmers' Market that occurs every Saturday; in addition to several public access pathways to the waterfront. In addition to the multiple uses there are several planned projects in the project area that WETA and the Port will be making sure

that the proposed project is consistent with. These include the future potential adaptive reuse of the Agriculture Building in effort by Golden Gate to rehabilitate their existing berthing floats as well as improvements related to the BART leasehold on the eastern end of the Ferry Plaza.

So this is a plan view of the existing conditions. And these include what was Phase 1 of the Downtown Ferry Terminal Expansion Project. It was completed in 2003, as we mentioned previously, by the Port of San Francisco and entailed the construction of the existing Gate B, which today supports the Vallejo and Tiburon ferry services to San Francisco, as well as the construction of Gate E, which supports the Alameda, Oakland and Harbor Bay ferry services to San Francisco.

In addition to the construction of the two new ferry gates, there were several improvements made to the deck and promenade spaces to support passenger circulation. As part of the completed Phase 1 efforts undertaken by the Port, there was a future expansion contemplated in the conceptual designs prepared. That expansion wasn't part of the environmental analysis of the project board or obviously part of the construction. What WETA is proposing at the Downtown Ferry Terminal Expansion Project is really a

continuation of those expansion efforts that were contemplated during the Phase 1 efforts. What WETA is proposing as part of the project are two additional phases, Phase 2 and Phase 3 which would represent build-out of the downtown ferry terminal facilities. This is a plan view of Phase 2, which would include the construction of three new ferry gates; Gate A, Gate F and Gate G. These improvements would occur between 2014 and 2017. Generally the improvements proposed as Phase 2 are clustered in two areas. We have the north basin between Pier 1 and the Ferry Plaza and the south basin between Pier 14 and the Ferry Plaza.

Looking a little more closely in these areas where the improvements are clustered, in the North Bay obviously we see the addition of Gate A, which would be required to support the future services to Berkeley and Richmond that are being developed by WETA. And as part of the improvements required to build Gate A and support the Berkeley and Richmond ferry services, we would be removing the existing Pier 1/2, making some minor improvements to the promenade to support day-to-day commuter services, as well as adequate waiting and queuing areas in the event of an emergency, and some other improvements on the land side including along both of these landside areas here weather

shelters that would provide customers protection from inclement weather in addition to add some organization to the queueing and waiting areas for the ferry services.

Moving to the south basin, we'll see the existing Gate E remains. As the Treasure Island service that is being proposed as part of the Treasure Island Redevelopment Project, and WETA would play a role in supporting and providing that service, when that service comes on line we'll need additional berthing capacity in the south basin.

So the Treasure Island service in conjunction with WETA's need for spare berthing capacity as well as layover berthing capacity for its existing services would really necessitate the construction of Gate F and Gate G. Currently, Alameda and Oakland operate out of Gate E. In the event that -- when these new gates are constructed, we would actually transfer the Alameda/Oakland services to Gate F and implement the Treasure Island Services at Gate E. In addition to the construction of the two new ferry gates in the south basin, you'll see some land side improvements here as well. Again, just to support day-to-day passenger circulation and emergency staging areas in the event of a regional disaster.

Notable improvements include the expansion of the promenade along the bay side toward the Bay and south toward Pier 13 and the additional deck improvements on the south side of the Agriculture Building. The south basin improvements also entail the removal of Pier 2, which is currently occupied by Sinbad's restaurant.

Phase 3 is proposed, the construction of Phase 3 is projected for sometime between 2020 and 2030. It would entail the remodeling of the existing Gate E to support larger bow-loading vessels. These vessels would potentially be required should full build-out of Treasure Island happen and the ridership demand for ferry service between Treasure Island and San Francisco achieve a significant enough volume that the side-loading vessels are no longer able to support the services. In that instance, we would require the larger, bow-loading vessels to move the anticipated demand of people between Treasure Island and downtown San Francisco.

The NEPA/CEQA analysis that WETA is currently undertaking for this project will consider the entire build-out of both Phase 2 and Phase 3, really looking at the maximum potential impact of the build-out of the Downtown Ferry Terminal facility.

WETA working with its environmental consultant, URS, has identified a few preliminary environmental issues that will warrant special attention as we prepare the draft EIR/EIS. We've listed a couple of those in the slide. Of particular note, our potential circulation issues regarding traffic and pedestrian flows; aquatic resource impacts, there will be in-water work required as part of this project which will entail demolition of existing pier facilities; installation of new piles; as well as a minor amount of dredging. And the project will also look at cumulative impacts of this project in combination with other projects being planned and developed along the waterfront, for instance, the America's Cup cruise terminal project and other projects contemplated along the waterfront.

In terms of schedule, we're obviously right now in the scoping process. The scoping period is scheduled to extend May 16th. You're free to submit your comments verbally today or in writing via email or mail to WETA through the end of the scoping period at May 16th. We're anticipating preparation and release of the draft EIR/EIS by early next year, spring 2012. At that point public and resource agencies will have an opportunity to comment on the draft EIR/EIS. WETA will address all comments received on the draft EIR/EIS, the

final EIR/EIS which is tentatively scheduled release in late 2012. We're calling it fall 2012 in the schedule.

So before we open up for public comments in the scope of the EIR/EIS, I'd just like to give everyone an opportunity to kind of field any questions they have about the presentation before we move to a more formal documentation of the comments on the scope.

Were there any questions about phasing or the concept designs presented today? Veronica?

UNIDENTIFIED SPEAKER: Yes. Mike, would you just repeat the services that are coming in to Gate A? You said Richmond, and what was the other service?

MR. GOUGHERTY: Berkeley.

UNIDENTIFIED SPEAKER: Berkeley. I'm sorry, I missed it. And then Gate G?

MR. GOUGHERTY: Gate G would function as a spare berthing facility well as a layover berthing facility and potentially support other services that are in various stages of development.

UNIDENTIFIED SPEAKER: And my last question, can you offer any updates on the Golden Gate Ferry project that's been in design for the last decade?

MR. GOUGHERTY: It's really not part of our project. We have been in preliminary talks with them as to where they are in the environmental review of the

project, but I'm just honestly not well-informed enough about where they are in the project. It will be one of the projects that is considered in the cumulative analysis of our project.

UNIDENTIFIED SPEAKER: Oh, it will?

MR. DOUGHERTY: Mike, I was wondering if you could outline for us the, for lack of a better word, the real estate that Golden Gate has access to that we do not infringe on in the basin there?

MR. GOUGHERTY: I don't have that information readily available right now. What we'd like to do right now is really focus on the scope of the EIR/EIS, really looking at potentially significant environmental impacts that will need to be addressed in the draft EIR/EIS. I'd be happy to get that information to you at another point.

MS. CONNERS: A question about the environmental impacts with circulation. Is that including pedestrians, delivery vehicles? That was one of the bullet points.

MR. GOUGHERTY: So I think it's kind of a good opportunity to turn it really over to you guys to submit your comments on what you would like to see evaluated in the draft EIR/EIS. Not so much for us to respond to what we think should and shouldn't be

included, but for a chance for you to go on the record and state what you feel should be included in the scope.

With that understanding, if you would like to formalize that in a comment.

MS CONNERS: Jane Conners with the Ferry Building. I would definitely have concerns just about the improvements impacting pedestrians, just habits and what people are used to back there, and also obviously vehicular with regard to our deliveries and stuff. Those are my major concerns just to be considered during the study.

MS. WISE: My name is Ernestine Wise, and I'm concerned with the area in the south side of the wall where the statue is. The fencing along there is so neglected. That whole area needs a lot of improvement. Will that be included in your scheme?

MR. GOUGHERTY: Is there a particular environmental impact associated with that area that we would need to address in the EIR/EIS?

MS. WISE: It's part of the whole plan to improve that area.

MR. GOUGHERTY: The scope of our project right now is really limited to the expansion of the Downtown Ferry Terminal facilities, so that is not part of the

scope of the project at this point.

MS. WISE: Okay.

MS. CONNERS: Jane again from the Ferry Building. The potential pile driving to cover the lagoon, just to look at a variety of how the pilings would be driven down through the mud and stuff so that it would impact -- the building definitely shakes as it is very now and then, it's on pilings, but just how that would impact the building. I think also the weight bearing capacity of the back plaza if it's staged for emergency evacuation, I think that's something that might need to be looked at for the environmental process. If there's 25,000 people with emergency vehicles, et cetera, that might be something we need to look at.

MR. GOUGHERTY: We have a court reporter taking all this. Thank you.

MS. CONNERS: Okay, great.

MR. GOUGHERTY: Any other comments on the scope of the EIR/EIS?

MS. WISE: How would they accommodate the ambulance and fire and police people in case of emergency?

MR. GOUGHERTY: Again, the circulation impact.

MS. CONNERS: I think another scope is just the

air quality for HVAC systems for any of the surrounding buildings, which would include the Ag Building, Ferry Building, Pier 1, pedestrian, there's a lot of joggers along the Embarcadero, and I think during the construction just sort of information about the air quality during construction would probably come up.

UNIDENTIFIED SPEAKER: Will they be refueling all the water vehicles there in that area?

MR. GOUGHERTY: I'm sorry, was the question --

UNIDENTIFIED SPEAKER: Will there be fueling?

MR. GOUGHERTY: No, there will be no fueling at this terminal facility of the vessels.

MS. WISE: And also, what about noise like the pile driving and all that stuff?

MR. GOUGHERTY: So noise impacts?

MS. WISE: Because the large apartments across the way and office buildings that might be impacted.

MR. GOUGHERTY: Any additional comments?

MR. SINDZINSKI: I was just going to say, Mike, that we will stay here at least until 6:15, but people don't have to feel like they have to stay. We do. You're welcome to stay.

MR. GOUGHERTY: So we won't be providing anymore information about the project, but we will be staying here to accept comments on the scope. So if

anybody has additional comments, feel free to stay behind. If not, you're more than welcome, as John mentioned, to look at the boards further or hang around or take off.

UNIDENTIFIED SPEAKER: You said the comments period is open until May 16th. So any comment made now by some interested party is no more valuable then one made to you?

MR. GOUGHERTY: All comments are considered equally.

MR. DOUGHERTY: One last comment. Tom Dougherty with MMP. Under navigation and safety, I'd like that to include a more detailed look at the dynamics of vessel operations here of the tides, currents, wind, storm conditions, as well as vessel traffic, commercial and otherwise, recreational traffic swimmers, row boats, kayaks, things like that so there's a lot to consider besides environment impacts on the Bay itself. The effects of the location of the terminals and the positioning of the berthing as to the safety of navigation of the vessels.

MR. GOUGHERTY: Thanks.

MR. DOUGHERTY: Thank you.

(Off the record at 6:30 p.m.)

I do hereby certify that the foregoing meeting was taken at the time and place therein stated; that the testimony of said parties was reported by me, a shorthand reporter and a disinterested person, and was under my supervision thereafter transcribed into typewriting.

CHERIE L. LUBASH

APPENDIX J
LETTERS AND E-MAILS SUBMITTED

"Michael Gougherty" <Gougherty@watertransit.org>

07/01/2011 02:06 PM

To

<Julie_Bixby@URSCorp.com>

cc

Subject FW: WETA Downtown Ferry Terminal Expansion Project Contact Info

Hi Juile,

This is an email from the date I spoke with ACOE concerning the DFTX project. I provided general information about the project, ACOE did not have any specific scoping comments at the time.

Thanks,

Mike

Planner/Analyst

San Francisco Bay Area

Water Emergency Transportation Authority

Pier 9, Suite #111, The Embarcadero

San Francisco, CA 94110

ph: 415.364.3189 fx: 415.291.3388

From: Michael Gougherty

Sent: Tuesday, June 14, 2011 10:15 AM

To: holly.n.costa@usace.army.mil

Cc: Debra Jones

Subject: WETA Downtown Ferry Terminal Expansion Project Contact Info

Hi Holly,

My contact information is below, feel free to forward me any specific comments about the project that the Corps has.

Thanks,

Mike Gougherty

Planner/Analyst

San Francisco Bay Area

Water Emergency Transportation Authority

Pier 9, Suite 111, The Embarcadero

San Francisco, CA 94111

P: 415.364.3189 F: 415.291.3388

From: Fraser, Tim [mailto:ttf@cpdb.com]

Sent: Friday, May 13, 2011 3:25 PM

To: Michael Gougherty

Cc: Doherty, Ann

Subject: Concerns to address on the Environmental Impact Report regarding the Ferry Terminal Expansion Project

Dear Mr. Gougherty,

Thank you for coming to the Ferry Building last Wednesday, May 11, 2011, to communicate the plans for the Ferry Terminal Expansion Project, and for facilitating the ability to see our concerns addressed on the Environmental Impact Report. With the time we have had between the meeting last Wednesday and tomorrow's deadline to submit our concerns, the following are concerns of the environmental impact that could be caused by the design or construction of the expansion project, and that we would like to see addressed on the Environmental Impact Report:

- Air Quality- Will this work create a lot of dust? If so, what will be done to prevent the dust from covering the windows and entering through windows and air vents?
- Pile Driving- I was very happy to hear that you are considering a method of vibrating the pilings into the earth, rather than driving/pounding them in, to reduce noise. Our question is this; how severe is this vibration, will this be felt by Ferry Building tenants, and will we need to take precautions so that things won't slide off tables & shelves, or that pictures & art that's hung on the wall won't bang against the wall or fall?
- Pedestrians Traffic- will there be signage with directions to the Ferry Building, and anything else that needs to be done, in the event of blocked sidewalks or closed pedestrian areas, to make sure that our clients and visitors are informed as to how to find our office during construction?
- Aesthetics- In the meeting it was mentioned that the structure to be built for a weather-protected area for queuing for Gate B (and possibly similar construction for other gates) would probably have panes of glass overhead to block rain. I can tell you from working here for almost eight years that windows and glass around the ferry building are a magnet for bird droppings. The north end of our suite

overlooks this area and we do not want to look out upon a long pile of bird droppings. What will be done to maintain this, and any other structures, as a clean, aesthetically pleasing amenity? Another example of an aesthetic concern would be that any and all debris be removed promptly after its accumulation. Also, a large part of what makes the Ferry Building such a wonderful place to work, visit, and do business are the wonderful views. What will be done to make sure that these views remain unobstructed?

Thank you again for taking time to come to the Ferry Building to share details of the Ferry Building Expansion Project with us, and for your attention to these matters.

Sincerely,

Tim Fraser Facilities Department Coblentz, Patch, Duffy & Bass, LLP (415) 677-5210 [Direct]

From: Jane Connors [mailto:Jane_Connors@equityoffice.com] **Sent:** Monday, May 16, 2011 4:14 PM **To:** Michael Gougherty **Cc:** Dan Hodapp; elsa.lamb@sfport.com; James.Hurley@sfport.com **Subject:** [!! SPAM] Ferry Building - Comments for WETA for the purpose of defining the scope and content of the EIS/EIR

May 15, 2011

Mike Gougherty

Planner/Analyst

San Francisco Bay Area

Water Emergency Transportation Authority

Pier 9, Suite 111, The Embarcadero

San Francisco, CA 94111

RE: Water Emergency Transit Authority (WETA) - Downtown Ferry Expansion Plan –

Comments for WETA for the purpose of defining the scope and content of the EIS/EIR.

Dear Michael:

Thank you for the opportunity to comment on the scope and content of the EIS and EIR for WETA's Downtown Ferry Expansion Plan. Equity Office understands the vital importance of the WETA's Downtown Ferry Expansion Plan. As the Ferry Building landlord we have the responsibility to fully evaluate the implementation of this project and minimize the environmental impacts to our tenants needs on the back plaza, while simultaneously supporting WETA's Ferry Expansion Plan. Please address the following Ferry Building concerns in the EIR:

- WETA to consider extending a full plaza from Gate B to Pier 1 rather than finger pier/planks from Embarcadero sidewalk – so that there is abundant queuing area for ferry passengers. Passenger ridership will increase three fold in the next 20 years – so we should take queuing off already congested Embarcadero sidewalks.

- WETA should consider install of solar panels on queuing canopies over berthing areas for night time and emergency lights.

- Determine an area for a back up generator to power dock lights, pier hydraulics, etc.

- Noise and dust impacts on retail and office tenants of the Ferry Building could lead to requests for rent reductions, loss of revenue and possible requests for interim relocation or lease terminations. Equity Office would ask that WETA look for ways to mitigate noise & dust. Or have a method to reimburse EOP if tenant claims are legitimate.

- Study increase in wake/wave activity due to increase of ferry activity and how that may affect the pilings under Ferry Building.

- The queuing canopy by Gate B will obstruct views from Slanted Door's café and restaurant areas. Because queuing only happens seasonally – and often only one ferry ride in mid-afternoon during work week – we ask that this not be included in final design.

- WETA to provide assurances that proves it meets all current ADA standards for egress/ingress near and on the expansion areas.

- WETA to investigate how construction work could affect the settlement or structure to Ferry Building (a historic structure) – or ferry plaza platform as a result of ferry expansion.

- Loss of retail views and outside seating due to construction

could lead to reduced retail sales and retailer requests for rent reductions or lease termination. Equity Office requests that WETA look for ways to enhance barricades with farmers market, ferry transit and local food messaging.

- WETA will mitigate any rodent, pest or bird control issues that may arise due to ferry expansion construction. In EIR please study the potential impacts.
- Please incorporate bird deterrents on any up high structures or ledges.
- Please incorporate a cleaning plan for all up high facilities in designs (accumulation of debris & bird droppings on roof canopies)
- Make sure idling ferry fumes are required BAAQD distance from café areas.
- WETA to keep Ferry Plaza Farmer's Market operating on back plaza during the project. Equity Office asks that WETA look for ways to keep majority of construction site on barges.
- WETA to provide prompt removal of any floating debris from construction immediately. Please consider a marine barrier during construction that would mitigate this need.
- Equity Office requests WETA to hire structural engineer to take initial and subsequent surveys of Ferry Building structure to ensure it remains undamaged by the ferry expansion project.
- WETA to provide a study of ferry passenger circulation that provides stats on ridership numbers, ferry commuter habits, ferry passenger bike commuting and rest room uses on boats and at Ferry Building.
- WETA to reimburse Equity Office fees associated hire a structural or geotechnical engineer to review WETA's plans, as they relate to the Ferry Building, or monitoring information. Equity Office will need them if we experience excessive noise, vibration or movement.

- During Construction request that WETA use Ferry Building approved vendors for Pest Control, Bird Abatement, cleaning and/or other areas that require mitigation of impact on Ferry Building Property..
- Specifically request air quality testing for the interior of building in accordance with ASHRAE 62.1-2007
- Request addition of restroom, storage, and bike storage facilities to plaza build-out.

Thank you for consideration and we look forward to working with WETA. Should you require further information or have any questions, please contact me at (415) 983-8001.

Sincerely,

Jane Connors

Equity Office Properties

Senior Property Manager

The Ferry Building

-----Original Message-----
From: Debbie_Allen@nps.gov [mailto:Debbie_Allen@nps.gov]
Sent: Friday, May 06, 2011 6:29 PM
To: Michael Gougherty
Cc: waso_eqd_extrev@nps.gov; Alan_Schmierer@nps.gov;
lisa_treichel@ios.doi.gov
Subject: Re: ER-11/0311:San Francisco Ferry Terminal Expansion Project

PWR has no comment regarding subject document.

Debbie Allen
National Park Service
Partnerships Programs, PWR
1111 Jackson Street #700
Oakland, CA 94607
510/817-1446
510/817-1505 Fax

"Don't dwell on what went wrong. Instead, focus on what to do next. Spend your energies on moving forward toward finding the answer." -- Denis Waitley

Ellen_Singleton@nps.gov 04/08/2011 10:35 AM	Debbie_Allen@nps.gov	To cc Subject ER-11/0311:San Francisco Ferry Terminal Expansion Project

United States Department of the Interior
National Park Service Environmental Quality Division
7333 W. Jefferson Avenue
Lakewood, CO 80235-2017

EIS/Related Document Review: Detail View
http://er2000/detail.cfm?ernum=15472

Document Information

Record #15472

ER Document Number
ER-11/0311
Document Title
San Francisco Ferry Terminal Expansion Project
Location

State
California
County
San Francisco County

Document Type
Notice of Intent, Prepare Environmental Impact Statement
Doc. Classification
Transportation Project
Applicant
Federal Transit Administration
Web Review Address

http://edocket.access.gpo.gov/2011/2011-8227.htm

http://www.watertransit.org/

Document Uploads

Documents Uploaded

File Name
Description

File Size

Bytes

ER 11-0311 [NOI FTA SAN FRANCISCO FERRY TERMINAL EXPANSION, SAN FRANCISCO CITY & COUNTY, CA] - NOI.pdf

OEPC Memo

39237

Document Reviewers

WASO Lead Reviewer

WASO Reviewers

Carl Wang(2420), David Vana-Miller(2380), Bill Commins(2200), Lee Dickinson(2460), Dave Kreger(2033), Marchelle Dickey(2310), Sandy Lardinois(2310), Roxanne Runkel(2310), Ellen Singleton(2310), David Jacob(2310), Wayne Strum(2225), Joe Carriero(2310), Daniel Odess(2255), Jennifer Lee(2340), Kerry Moss(2360), Pat Gillespie(2225), Fred Sturniolo(2420)

Regional Lead Reviewer

Alan Schmierer (PWR-O)

Regional Reviewers

Alan Schmierer(PWR-O), Cassie Thomas(AKRO), Debbie Allen(PWR-O), Michael Taylor(PWR-O), Joseph Balachowski(PWR-S)

OEPC Contact

Lisa Chetnik Treichel

Action

Lead Bureau
REO/Office of Environmental Policy and Compliance
Response Type
Directly
Instructions
Comments sent directly to Applicant. NPS Lead consolidates comments, prepares and sends comment/no comment letter directly to Applicant with copy to EQD (WASO-2310), OEPC, and (if applicable) appropriate REO. See DI Remarks Section below for specifics.

Topic Context

The proposed project would serve commuters, visitors, and recreational users desiring an alternative way to cross San Francisco Bay, and reach nearby employment, entertainment, and recreational destinations in San Francisco. The project expands the number of ferry gates and improves ferry patron circulation, boarding, and wayfinding in and around the Ferry Building. In addition, the project enhances emergency response capabilities to evacuate people from San Francisco and/or mobilize first responders to San Francisco via ferries if a catastrophic event occurs.

DI Remarks

Reviewers: Please email comments, if any, to NPS Lead Alan Schmierer, PWRO, by May 4, 2011.

NPS Lead: Alan, please consolidate NPS comments in letter format (or no comment email) and send directly to the person listed in the notice by May 12, 2011, with copy to waso_eqd_extrev@nps.gov and Lisa_Treichel@ios.doi.gov

Workflow

Send Comments to Lead Office: PWR-O
Send to: Alan Schmierer (PWR-O) by 05/04/11

Lead DOI Bureau: REO/Office of Environmental Policy and Compliance
DUE TO: Lead Bureau by 05/12/11
DATE DUE OUT: 05/12/11

OEPC Memo to EQD: 04/08/11
Comments Due To Lead WASO Div:
Comments Due Out to
OEPC/Wash or Applicant: 05/12/11
Comments Due To Lead Region: 05/04/11
Comments Due in EQD:
Comments Due to REO:

Tracking Dates

Rcvd. Region Comments:
Comments Sent to OEPC, REO, or Applicant:
New Instructions:
Recvd. Ext. Letter:
Reg. Cmts. to Bureau:
Cmts. Called In:
Comments Sent to EQD Chief:
Comment Letter/Memo Signed:
Recvd. Extension:
Sent Add. Info:
Reg. Cmts. Listed:
Rcvd. Bureau Cmts:

Tracking Notes

Reviewer Notes

Documentation

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SAN FRANCISCO BAY AREA RAPID TRANSIT DISTRICT
300 Lakeside Drive, P.O. Box 12688
Oakland, CA 94604-2688
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2011

By Hand Delivery

May 16, 2011

Mike Gougherty
WETA Project Manager
SanFrancisco Bay Water Emergency Transportation Authority
Pier 9, Suite 111, The Embarcadero
San Francisco, CA 94111

Re: Scoping Comments on Preparation of a Draft Environmental Impact Statement/Environmental Impact Report for the Downtown San Francisco Ferry Terminal Expansion Project

Dear Mr. Gougherty:

Thank you for the opportunity to comment on the Notice of Intent ("NOI") to prepare an Environmental Impact Report ("EIS") issued by the Federal Transit Administration ("FTA") and Notice of Preparation ("NOP") of an Environmental Impact Report ("EIR") issued by San Francisco Bay Water Emergency Transportation Authority ("WETA") for the Downtown San Francisco Ferry Terminal Expansion Project ("Project").[1] The Project will support and expand ferry service on the San Francisco Bay by reconfiguring existing and adding new ferry terminals in the vicinity of the San Francisco Ferry Building. The Project will encourage transit use and in principle will be a positive addition to the Bay Area's transit system.

BART has a strong interest in the Project, both as the operator of rapid transit facilities and the owner of property interests within the Project area. In fact, the platform east of the Ferry Building ("Platform") was constructed originally by BART, pursuant to a 1965 Agreement for Joint Exercise of Powers between BART and the State of California, then-owner of the Port of San Francisco. In addition to BART's facilities, the Platform today contains the San Francisco Ferry Plaza and the Golden Gate Bridge, Highway and Transportation District ferry terminal, as well as a restaurant and other amenities. Nevertheless, pursuant to the Agreement for Joint Exercise of Powers, the express purpose of the Platform is to protect BART's facilities in the San Francisco Bay. In addition to the Agreement for Joint Exercise of Powers, BART also enjoys

[1] It is not clear from the NOI and NOP whether FTA and WETA intend to prepare separate EIS and EIR documents or a single joint EIS/EIR. For convenience, we refer in these comments to a joint EIS/EIR.

certain statutory and other rights to use the San Francisco Bay tidelands and submerged lands and the Platform, including, but not limited to California Public Utilities Code Sections 29031 and Section 29033 and the Public Trust Doctrine. Additionally, BART operates its Embarcadero Station which would become a significant transfer point for new transit riders arriving and leaving San Francisco using the proposed expanded ferry terminal.

The Project will impact these BART facilities in the vicinity of the Project area. Moreover, the Project will require BART's approval for use of BART's property interests at and around the Platform, and BART will rely on the EIS/EIR for purposes of its own California Environmental Quality Act ("CEQA") compliance in issuing such approval. Therefore, BART should be consulted and listed in the EIS/EIR as a "Responsible Agency" under CEQA.

To facilitate the CEQA and National Environmental Policy Act ("NEPA") review processes, we offer the following scoping comments regarding issues and potential impacts of the Project of concern to BART.

1. **Impacts on Existing Transit:** In general, under NEPA and CEQA, the lead agencies are responsible for identifying all adverse impacts, and mitigation measures and alternatives to avoid or minimize impacts. In addition, the Transportation section of CEQA Guidelines Appendix G, recently amended by the Resources Agency in response to SB 97, specifically includes impacts on mass transit as a component of CEQA analysis, as do the "Transportation Impact Analysis Guidelines for Environmental Review" of the San Francisco Planning Department. The EIS/EIR analysis should include a full accounting of increased passenger uses of the Embarcadero Station attributable to the proposed ferry terminal improvements as well as increased use of the overall BART System, during both regular service and special events. In addition, to the extent that the Project requires any modifications to BART facilities or property, WETA is fully responsible for mitigating both direct and indirect environmental impacts.

2. **Land Use:** BART operates and maintains rapid transit facilities within the Project area. The EIS/EIR should address the Project impacts on land use for public transportation purposes and Public Trust uses of the bay and waterfront, particularly existing easement rights for public transportation facilities and potential future rail and rapid transit.

3. **Noise and Vibration:** The EIS/EIR should address the Project impacts of construction vibration on the Platform, BART Facilities, and the seawall along the Embarcadero.

4. **Geology and Soils:** The EIS/EIR should analyze construction impacts to the stability of the bay mud and slope and include mitigation to maintain stability.

5. **Dredging And Bay Fill:** The EIS/EIR should address impacts of any dredging or soil displacement, such as scouring and sediment build-up,both due to construction activities and in the long term as a result of the Project. In particular, the use of piers or piles should be studied in relationship to impacts on existing and future uses of the Project area.

6. **Hazardous Materials Resulting From Demolition and Construction Activities:** Hazardous materials that may be introduced or disturbed as a result of the Project which have potential impacts to BART's facilities and workers must be assessed and impacts fully mitigated. In particular, risks from mobilizing contaminated sediments also must be addressed.

7. **Water Quality and Biological Resources:** Mobilizing contaminated sediments during construction activities also must be analyzed for potential impacts to water quality and marine life.

8. **Water Vessel Circulation:** The EIS/EIR should take into account BART's water-based access to its facilities in identifying and analyze the impact of added water vessels traffic and changed vessel circulation patterns, both during construction and in the long term. BART requires access to its facilities for maintenance, repair, and operation-related activities necessary to ensure the safe and efficient operation of its rapid-transit system. Any proposed changes to ferry service and other vessel circulation must take into account BART's water-based access to its facilities as part of existing conditions.

9. **Traffic Circulation:** The EIS/EIR should identify and analyze the impact of added vehicles and equipment and changed vehicle circulation patterns on the Platform and at the driveway on the south end of the Ferry Building, both during construction and in the long term as a result of the Project, including the following impacts:
   - Additional vehicle use of the Platform for construction activities, ongoing maintenance activities, deliveries, and other purposes; and
   - Access and circulation to and around BART facilities;

   As noted above, BART requires access to its facilities for maintenance, repair and operations-related activities. BART's current level of access to its facilities must be maintained and any impacts that may impair such access must be mitigated.

10. **Pedestrian Circulation:** The EIS/EIR should identify and analyze the impact of added pedestrian use of the Platform and at and across the fire lane and driveway on the south end of the Ferry Building, including the following impacts:

- Access and circulation to and around BART Facilities;
- Capacity of sidewalks and pedestrian routes to allow effective travel between points without stopping and gathering within the fire lane/BART's access route;
- Prominent wayfinding signs that will encourage smooth pedestrian and bicycle flow through and away from the Platform to prevent milling and blocking the fire lane/BART access route; and

Any proposed circulation plan must include safe routes for pedestrians, taking into account BART's vehicular access to its facilities as part of existing conditions.

11. **Fire and Life Safety:** The Embarcadero Station and BART's facilities in the Project area are subject to specific fire and life regulatory frameworks enforced by the San Francisco Fire Marshall, California Public Utilities Commission (CPUC) and the National Fire Protection Association (NFPA). The added passenger loads resulting from the Project could impede and increase the existing overall evacuation times at these locations. The impact on safety from increasing the number of passengers, particularly during peak periods, must be mitigated by contribution to a "fair share" of fire and life safety system improvements.
    - BART's facilities within the Project area provide an emergency evacuation route for BART passengers from BART's transbay tube to the Platform. The EIS/EIR analysis should include a full accounting of the impacts of ferry passenger uses of the Platform in relation to BART's need to maintain an effective evacuation route in the event of an emergency or major catastrophe.

12. **Security:** The EIS/EIR should address the security of structures and improvements at the Platform due to the added number of users of the Platform as a result of the Project. BART also has additional security concerns which it intends to raise during the EIS/EIR process.

13. **Cumulative Impacts:** In considering cumulative impacts of the Project together with other reasonably foreseeable projects, the EIS/EIR should take into account BART's ongoing work on Earthquake Safety Program and security improvements at and in the vicinity of the Ferry Plaza. Any contribution to significant cumulative impacts by the Project, during construction or in the long term, must be mitigated.

Thank you for considering our comments. BART requests to be added to the mailing list for all notices, documents and other information related to the Project. Please direct such correspondence to:

Carlton D. Allen
Chief Engineer
San Francisco Bay Area Rapid Transit District
300 Lakeside Drive, 9th Floor
Oakland, CA 94612

BART looks forward to collaborating with you to develop a successful Project with substantial benefits for the public and transit systems. Please feel free to contact me at 510-464-7283 if you have any questions.

Sincerely Yours,

Carlton D. Allen
Chief Engineer
San Francisco Bay Area Rapid Transit District

CDA/bjl

CC: BART Board Members
BART Executive Staff

bcdc

Making San Francisco Bay Better

May 16, 2011

Mr. Mike Gougherty
WETA Project Manager
San Francisco Bay Water Emergency Transportation Authority
Pier 9, Suite 111, The Embarcadero
San Francisco, CA 94111

SUBJECT: Notice of Preparation of a Draft Environmental Impact Report for the Downtown San Francisco Ferry Terminal Expansion Project; SCH #2011032066 (BCDC File No. MC.MC.7812.1)

Dear Mr. Gougherty:

Thank you for the opportunity to comment on the Notice of Preparation (NOP) of a Draft Environmental Impact Report (DEIR) for the Downtown San Francisco Ferry Terminal Expansion Project at the San Francisco Ferry Building, which our office received on April 1, 2011.

The Commission is a responsible agency for this project and will rely on the DEIR when it considers the project. The project is not specific enough at this time for us to comment on every issue raised with respect to the Commission's laws and policies. However, we have prepared comments outlining specific BCDC issues that should be addressed either in the DEIR or through the BCDC permitting process. Once we receive more details on the project, we will be able to provide more detailed responses and can work closely with the project applicant to ensure the project is consistent with the Commission's laws and policies. Although the Commission itself has not reviewed the NOP, the staff comments are based on the McAteer-Petris Act, the Commission's *San Francisco Bay Plan* (Bay Plan), the *San Francisco Waterfront Special Area Plan*, the Commission's federally-approved management program for the San Francisco Bay, and the federal Coastal Zone Management Act (CZMA).

Jurisdiction

The majority of the project would be located within the Commission's jurisdiction. The Commission's jurisdiction at this location includes all tidal areas of the Bay up to the line of mean high tide, all areas formerly subject to tidal action that have been filled since September 17, 1965, and the "shoreline band," which extends 100 feet inland from and parallel to the Bay shoreline. In addition, a majority of the project is located within the detailed planning area of the *San Francisco Waterfront Special Area Plan* (SAP).

The Commission's jurisdiction over piers that predate its establishment in 1965 are treated differently, depending on the scope of work proposed on the piers. Proposed development that does not involve any additional coverage of Bay water and that does not involve any work on the pier deck itself or its substructure is treated as within the Commission's shoreline band jurisdiction. Work that involves the removal and replacement of all or a substantial portion of a pier deck or its supporting pilings or substructure that would "significantly extend the life of the pier" or work on the pier that would allow the use or utility of the structure to change, is treated as within the Commission's Bay jurisdiction.

Commission permits are required for the demolition of piers, the construction of docks, gangways, ferry structures, and new pile decks, and changes in use within its area of jurisdiction. To authorize a project, the Commission must be able to find the activities are consistent with the McAteer-Petris Act, the policies and findings of the Bay Plan, and the policies and findings of any Special Area Plan for the site. In addition to any needed permits under its state authority, federal actions, permits, and grants that affect the Commission's jurisdiction are subject to review by the Commission, pursuant to the CZMA, for their consistency with the Commission's federally-approved management program for the Bay.

The Commission will need a detailed site plan that depicts the Commission's Bay and shoreline band jurisdictions, the existing conditions and the proposed project, areas where fill would be placed and removed, the proposed uses at the site, and proposed public access areas and improvements, in order to determine the extent of work proposed and to evaluate the project's consistency with its laws and policies.

Bay Fill

Section 66605 of the McAteer-Petris Act sets forth the criteria necessary to authorize placing fill in the Bay and certain waterways. It states, among other things, that further filling of the Bay should only be authorized if it is the minimum necessary to achieve the purpose of the fill and if harmful effects associated with its placement are minimized. According to the Act, fill is limited to water-oriented uses or minor fill for improving shoreline appearance or public access and should be authorized only when no alternative upland location is available for such purpose. Under the SAP, piers not designated for removal may be repaired or wholly reconstructed for uses that are consistent with the Public Trust Doctrine and the Port's Legislative Trust Grant without triggering the water-oriented use and no alternative upland location criteria of Section 66605 of the McAteer-Petris Act, subject to additional criteria and policies.

Under the SAP, both Piers ½ and 2 are designated for removal.[1] Special Condition II-B-7 of BCDC Permit No. 7-97 (as amended through January 10, 2007, Amendment #9) requires the removal of 16,000 square feet of Pier ½ to expand the open water area at this location. Within newly created open water areas at Piers ½ and 2, new fill is limited to certain uses defined in the SAP, including minor pile-supported or floating fill for water transportation uses, areas appropriate for additional ferry terminals, minor fill for improving shoreline appearance or public access to the Bay, or seismic and safety repairs to an existing pier that is not being wholly reconstructed.[2]

The Draft EIR should evaluate the amount of fill that would be removed from the demolition of Piers ½ and 2 in light of the SAP and BCDC permit requirements for these areas, and include a description of the amount of new fill for the project as a whole and for each specific area and the uses associated with the proposed new fill for each specific area. The description should include all new fill proposed including fill required for ferry service (docks, gangways, piles), fill for public access, fill within the area commonly known as the "lagoon" for emergency evacuation needs identified in the NOP, fill to reconstruct and raise the Agriculture Building, and fill for any other proposed uses. Depending on the amount of net total fill proposed and the uses proposed on fill, the Commission may require that fill be removed elsewhere on the waterfront to mitigate the amount of new fill proposed. Based on the project description in the NOP, it appears that most, if not all of the proposed fill would be for ferry or public access purposes, which is consistent with our Bay Plan policies.

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[1] See San Francisco Waterfront Special Area Plan, as amended through July 2000 (SAP), Figure 2: Open Water Basins, Open Water Areas and Public Plazas.
[2] See SAP, pp. 26-27.

Applicable Bay Plan Policies

The proposed project raises the following issues that the Commission has addressed through its Bay Plan policies. These issues should be addressed in the DEIR whenever possible and/or during the pre-application and permitting process.

1. **Public Access.** Section 66602 of the McAteer-Petris Act states, "...that maximum feasible public access, consistent with a proposed project, should be provided." According to the SAP, public access should be provided free of charge to the public, be generally accessible at any time, emphasize passive recreation, and focus on its proximity to the Bay and on the views and unique experiences that nearness to the Bay affords. BCDC Permit No. 7-97, issued to the Port of San Francisco for work on the downtown San Francisco Ferry Terminal, requires various public access improvements at the site, including a phased public access plan and program to enliven and improve public use of the Ferry Platform.

   The construction of three new ferry gates at the site will undoubtedly bring more people and passengers to the site and impact already heavily-used public access spaces. In addition to mitigating adverse impacts to existing public access areas and use at the site, BCDC requires that maximum feasible public access consistent with the project be provided. In order to fully evaluate the public access proposed with the project, the DEIR should include more detailed information regarding existing and proposed public access. If pedestrian promenades are proposed to be widened, new plazas on fill constructed, or existing areas improved, these should be fully described in the DEIR to allow the Commission to fully evaluate the public access proposed with the project.

   The DEIR should analyze the number of new ferry passengers and users to the site, their impact to existing public access areas, and evaluate whether the proposed new public access areas will accommodate these visitors and/or mitigate for these impacts. Providing this information will aid the Commission in determining whether the public access proposed with the project is the maximum feasible, consistent with the project.

   The DEIR should also consider the possible impacts the project may have on public access along the Embarcadero from the increased passengers arriving and departing from this location and possible queuing of passengers in public access areas. Any proposed plans to improve the Ferry Platform should seek to encourage more pedestrian and public access use of this area, should address limited service vehicle and valet parking requirements and should include provisions for limiting vehicle activity to authorized uses.

   The project will require review by BCDC's Design Review Board.

2. **Transportation.** Policy 5 of this section states that, "Ferry terminals should be sited at locations that are near navigable channels, would not rapidly fill with sediment and would not significantly impact tidal marshes, tidal flats or other valuable wildlife habitat. Wherever possible, terminals should be located near higher density, mixed-use development served by public transit. Terminal parking facilities should be set back from the shoreline to allow for public access and enjoyment of the Bay." The DEIR should address how the proposed project would meet this policy of the Bay Plan, including whether maintenance dredging would be required in the future.

3. **Fish, Other Aquatic Organisms and Wildlife.** The policies in this Bay Plan section address the benefits of fish, other aquatic organisms and wildlife and the importance of protecting the Bay's subtidal habitats, native, threatened or endangered species and species that are candidates for listing as endangered or threatened. The DEIR should address how the construction and use of the proposed project would meet these policies and minimize impacts to special-status species and habitat in the Bay. In particular, because the site is a highly-productive spawning ground for Pacific herring, a species of special concern, the DEIR should address the project's impacts to this species and discuss how these impacts would be mitigated.

4. **Water Surface Area and Volume.** Policy 1 in this Bay Plan section states that the surface area of the Bay and the total volume of water should be kept as large as possible and that filling that reduces area and water volume should be allowed only for purposes providing substantial public benefits and only if there is no reasonable alternative. The DEIR should discuss how the proposed project would maintain or improve open water areas in the Bay, with particular attention to the proposed increase in Bay fill from new docks and gangways and the filling of the "lagoon".

5. **Water Quality.** The policies in this Bay Plan section address water quality and require Bay water pollution to be prevented to the greatest extent feasible. Policy 3 in particular requires new projects to be sited, designed, constructed and maintained to prevent or minimize the discharge of pollutants in the Bay by controlling pollutant sources at the project site, using appropriate construction materials, and applying best management practices. The DEIR should address how the construction and use of the proposed project would be designed to control stormwater runoff and pollution to the Bay, including litter management.

6. **Safety of Fills and Sea Level Rise.** Policy 4 in this Bay Plan section states that structures on fill or near the shoreline should have adequate flood protection including consideration of future relative sea level rise as determined by competent engineers. The policy states, "as a general rule, structures on fill or near the shoreline should be above the wave runup level or sufficiently set back from the edge of the shore so that the structure is not subject to dynamic wave energy. In all cases, the bottom floor level of structures should be above the highest estimated tide elevation. Exceptions to the general height rule may be made for developments specifically designed to tolerate periodic flooding."

   In order to approve the project, the Commission will need to find that the public access and Bay fill project elements are designed with adequate flood protection, including consideration of future sea level rise. The DEIR should explain how the project elements are designed to address sea level rise and flooding during the life of the project (including storm surges). In particular, because the area of the Embarcadero near the Agricultural Building often experiences flooding during storm events, the DEIR should include a detailed discussion on the existing elevation at the site, the proposed finished elevation at the site and an analysis of whether the structures in this project area have been designed to withstand flooding, or set at an elevation to accommodate sea level rise. If the structures cannot be constructed at an elevation high enough to withstand periodic flooding, the DEIR should explain why this cannot be done at this time, and how the structures could be adapted in the future.

   The project will likely require review by BCDC's Engineering Criteria Review Board.

7. **Public Trust.** The State Lands Commission will need to determine that the project use is consistent with the public trust. BCDC will also be relying on this determination in deciding whether the project is consistent with its laws and policies. In order to evaluate the public trust uses, the DEIR should describe the proposed uses at the project site and the approximate square footage and percentage that each use would occupy.

Thank you for providing staff with the opportunity to review the NOP of a DEIR for the Downtown San Francisco Ferry Terminal Expansion project. We recognize the importance and scope of this project and hope these comments aid you in the preparation of the DEIR. We look forward to working with you and the project applicant as the project is developed and through the permitting stage. Please feel free to contact me at (415) 352-3616, or email me at mingy@bcdc.ca.gov if you have any questions regarding this letter or the Commission's policies and permitting process.

Sincerely,

MING YEUNG
Coastal Program Analyst

MY/gg

cc: James Hurley, Port of San Francisco
State Clearinghouse

WETA – Downtown Ferry Terminal Expansion Project
Record of Meeting: Agency Scoping with NMFS in Santa Rosa
May 4, 2011

Attendees:
NOAA National Marine Fisheries Service - Korie Schaeffer, Marine Biologist
WETA – Mike Gougherty, Chad Mason
URS – Bill Martin, Ian Austin

The meeting was held in the NOAA National Marine Fisheries Service (NMFS) offices in Santa Rosa because a NMFS representative was not able to attend the Agency Scoping meeting held in San Francisco on April 26, 2011.

Mike Gougherty provided an overview of the proposed Downtown Ferry Terminal Expansion Project as described in the project Fact Sheet. The project includes demolition of Piers ½ and 2 on the north and south side of the San Francisco Ferry building Gates B and E respectively, and construction of three new gates (Gates A, F, and G).

Korie Schaeffer comments:

- NMFS will need details of the square footage of new bay cover associated with the project (e.g., piers, ramps, and floats), of Bay fill removed (e.g.; Pier ½ and Pier 2) and of Bay covered (e.g., the BART construction hole). This information will be needed for both Phase 2 and Phase 3 build-out.

- NMFS requested that the same list of topics be addressed as the list that had just been discussed for the Berkeley ferry terminal project. The topics are related to potential impacts on Essential Fish Habitat and Endangered Species Act species that NMFS' regulatory authority requires it assess:

    - Underwater Sound
    - Overwater shading
    - Dredging
    - Marine mammals

May 9, 2011

Mike Gougherty
WETA Project Manager
San Francisco Bay Water Emergency Transportation Authority
Pier 9, Suite 111, The Embarcadero
San Francisco, CA 94111

RE: Downtown San Francisco Ferry Terminal Expansion Project, Scope and Content of the EIR/EIS

Dear Mr. Gougherty:

The San Francisco Municipal Transportation Agency (SFMTA) has received the Notice of Public Scoping Meeting for the Downtown San Francisco Ferry Terminal Expansion Project. On behalf of the SFMTA I would like to express our support for the proposed expansion of the Downtown Ferry Terminal. The expansion could help to reduce vehicle trips in the City and the region and is consistent with San Francisco's Transit First and Climate Actions policies.

We have reviewed the expansion proposal and would like the following issues to be included in the analysis of the EIR/EIS document:

Transit Transfer Agreements: The EIR/EIS should describe existing transfer agreements between ferry operators and Muni landside transit services. In order to increase the convenience of regional transit connections, transfers should be as seamless and economical as possible.

Pedestrian Impacts: With the increased ferry service pedestrian activities in front of the Ferry Terminal would increase. Please include an analysis of the impacts of the increased passengers on the sidewalks and the crossings of The Embarcadero in front of the Ferry Terminal in the EIR/EIS document.

Impact on the Public Transit System: With the increased ferry ridership, it is expected that Muni ridership around the Ferry Terminal in the outbound and inbound directions

would increase. Please include a line-by-line analysis of the impacts of the increased demand on Muni lines serving the area. We are attaching the F-Line data for the summer to be used in the analysis. Any potential increased dwell time to Muni operations as a result of increased vehicular congestion along The Embarcadero or pedestrian activities need to be assessed in the EIR/EIS.

Taxis: The current Ferry Terminal building curbside design does not allocate an area for taxi pick-ups or drop-offs or for bus or general passenger loading. With the increased ferry ridership taxi and other passenger pick-up and drop-offs are expected to increase. This area needs to accommodate taxis and other passenger loading demand so that double parking does not occur on The Embarcadero. Parking regulations on The Embarcadero are overseen by the Port of San Francisco, not SFMTA.

Parking Impact: With the increased ferry ridership, parking usage in the area is expected to increase. Please include an analysis of parking availability around the Ferry Building and how any increase in parking demand would be met.

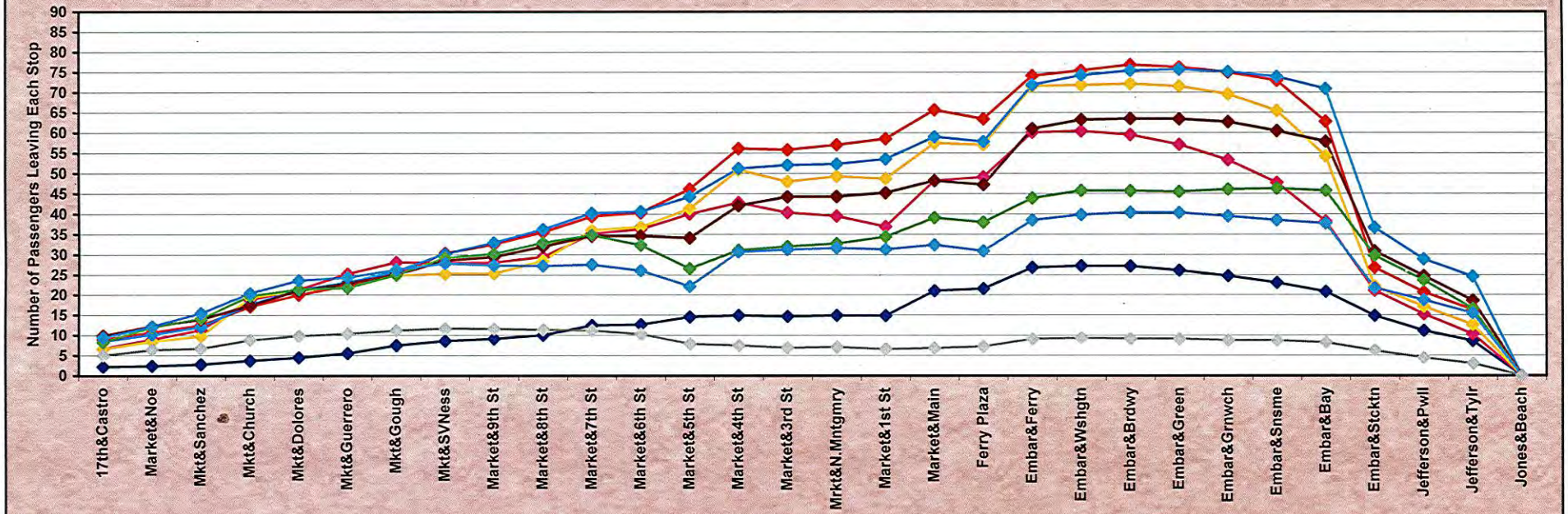
Please feel free to contact Jerry Robbins at 415-701-4490 or Rana Ahmadi at 415-701-4451 if you have any questions or need further information.

Sincerely,

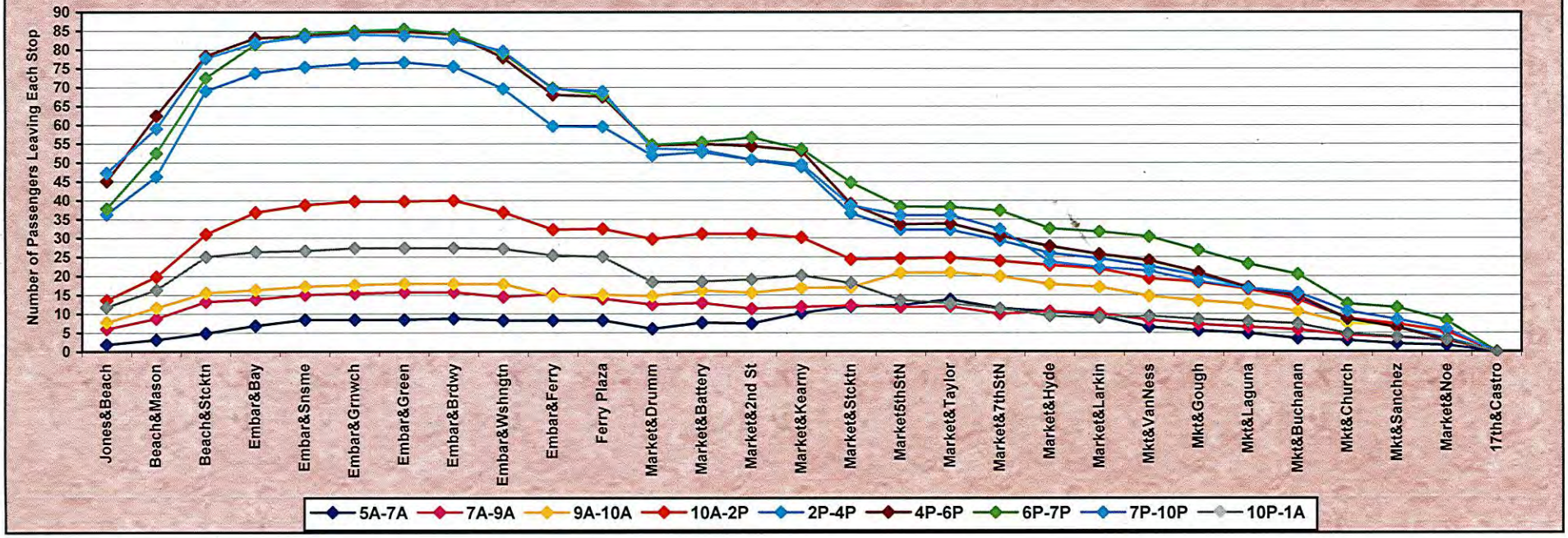
Bond M. Yee
Director of Sustainable Streets

Attachment

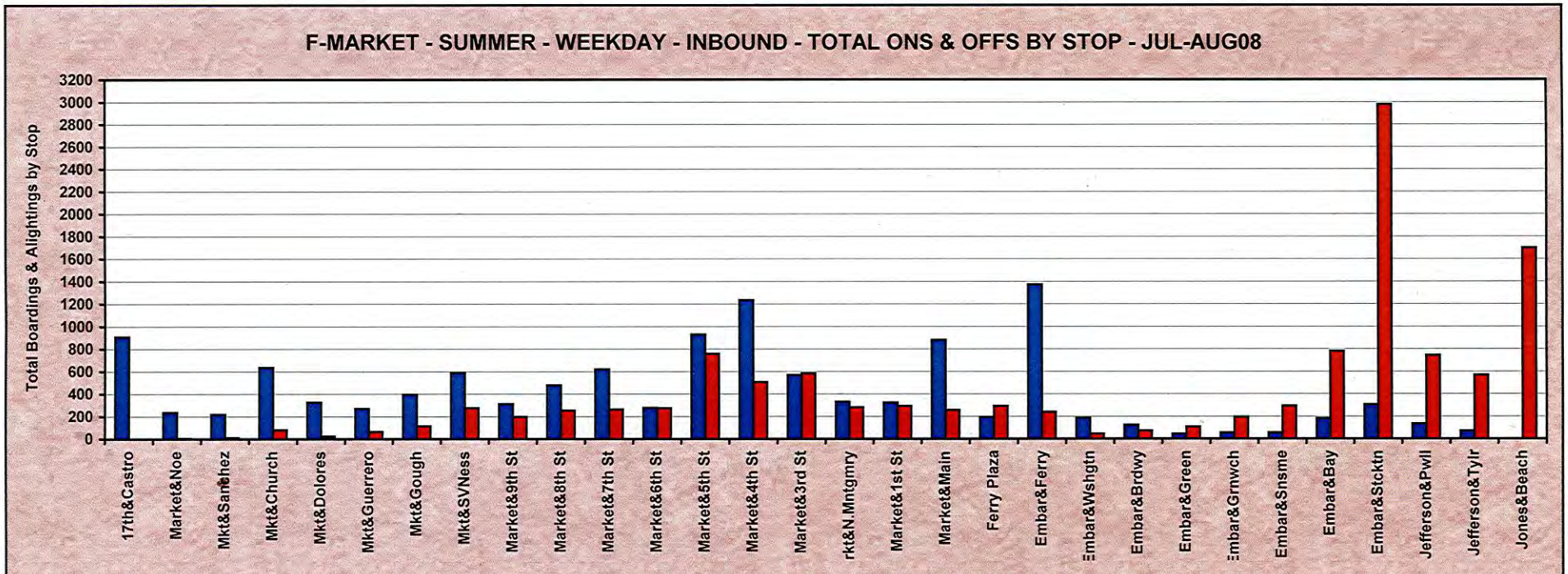
F-MARKET - SUMMER - WEEKDAY - INBOUND - AVER LEAVING LOAD BY STOP & TIME PERIOD - JUL-AUG08



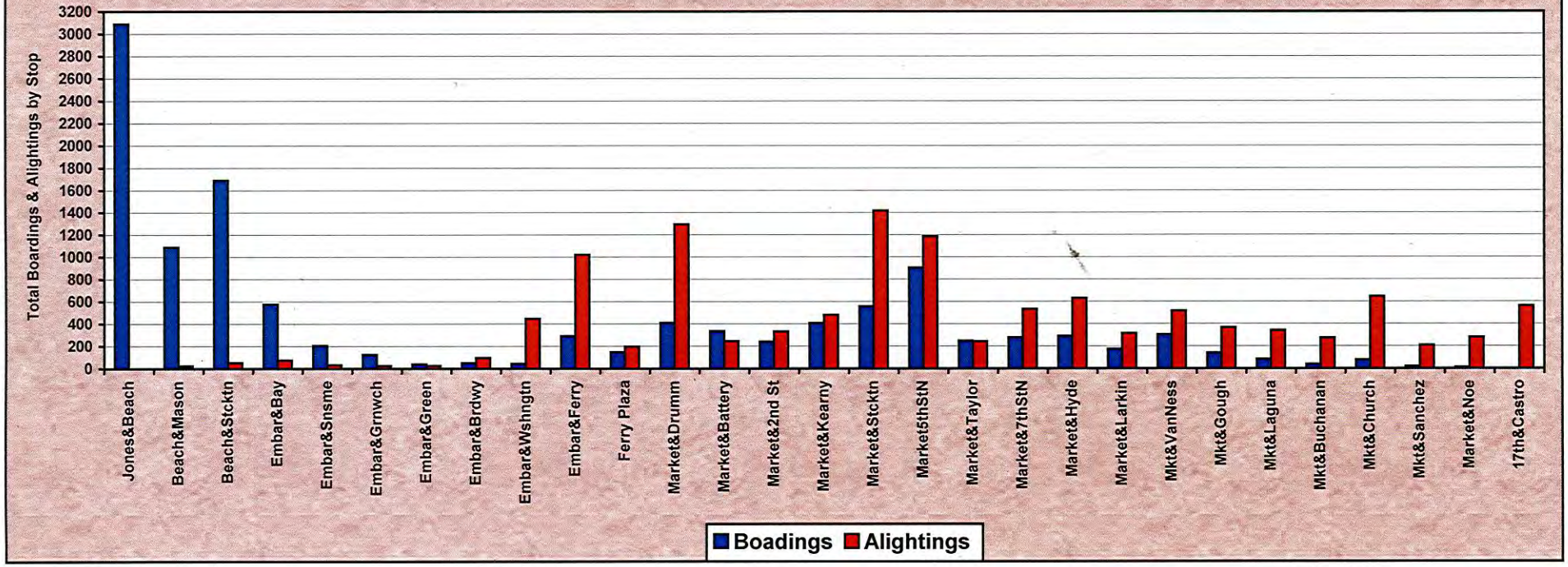
F-MARKET - SUMMER - WEEKDAY OUTBOUND - AVER LEAVING LOAD BY STOP & TIME PERIOD - JUL-AUG08



F-MARKET - SUMMER - WEEKDAY - INBOUND - TOTAL ONS & OFFS BY STOP - JUL-AUG08



F-MARKET -SUMMER - WEEKDAY - OUTBOUND - TOTAL ONS & OFFS BY STOP - JUL-AUG08



F-MARKET - SUMMER
WEEKDAY - INBOUND - JUN08 SIGNUP
DATA GATHERED JUL08-AUG08

AVERAGE ON, OFF, PASSENGER LOAD

	EARLY AM PEAK 4:00AM-6:59AM			AM PEAK 7:00AM-08:59AM			LATE AM PEAK 9:00AM-9:59AM			MIDDAY 10:00AM-1:59PM			EARLY PM PEAK 2:00PM-3:59PM			PM PEAK 4:00PM-5:59PM			LATE PM PEAK 6:00PM-6:59PM			EARLY EVENING 7:00PM-9:59PM			LATE EVENING 10:00PM-1:59AM		
LOCATION	AVG ON	AVG OFF	AVG LOAD	AVG ON	AVG OFF	AVG LOAD	AVG ON	AVG OFF	AVG LOAD	AVG ON	AVG OFF	AVG LOAD	AVG ON	AVG OFF	AVG LOAD	AVG ON	AVG OFF	AVG LOAD	AVG ON	AVG OFF	AVG LOAD	AVG ON	AVG OFF	AVG LOAD	AVG ON	AVG OFF	AVG LOAD
17th St&Castro St	2.2	0.0	2.2	6.7	0.0	6.7	6.7	0.0	6.7	9.0	0.0	9.0	8.5	0.0	8.5	9.9	0.0	9.9	8.3	0.0	8.3	9.5	0.0	9.5	5.0	0.0	5.0
Market St&Noe St	0.2	0.0	2.4	2.3	0.0	9.0	1.9	0.1	8.5	1.7	0.0	10.7	1.8	0.1	10.2	2.4	0.1	12.2	3.8	0.1	12.0	2.7	0.0	12.2	1.4	0.0	6.4
Market St&Sanchez St	0.4	0.0	2.8	2.3	0.0	11.3	1.4	0.1	9.8	1.9	0.1	12.5	2.0	0.1	12.1	1.9	0.2	13.9	2.1	0.0	14.1	3.3	0.0	15.5	0.4	0.1	6.7
Market St&Church St	1.2	0.3	3.7	7.7	0.3	18.7	9.9	0.3	19.4	5.3	0.7	17.1	6.3	0.8	17.6	4.8	1.3	17.4	7.1	1.4	19.8	5.6	0.7	20.4	2.4	0.3	8.8
Market St&Dolores St	0.8	0.0	4.5	2.7	0.1	21.3	1.9	0.2	21.1	3.1	0.2	20.0	3.9	0.3	21.2	4.0	0.3	21.1	1.9	0.3	21.4	3.4	0.2	23.6	1.2	0.2	9.8
Market St&Guerrero St	1.0	0.0	5.5	4.2	0.3	25.2	1.7	0.6	22.2	3.0	0.6	22.4	2.7	0.8	23.1	2.4	0.7	22.8	1.8	1.4	21.8	1.1	0.4	24.3	0.9	0.3	10.4
Market St&Gough St	2.0	0.0	7.5	3.8	0.9	28.1	3.4	0.7	24.9	3.8	1.0	25.2	4.2	1.4	25.9	3.6	1.3	25.1	4.8	1.6	25.0	3.1	1.1	26.3	1.3	0.5	11.2
Market St&South Van Ness Av	1.7	0.6	8.6	4.2	4.4	27.9	5.1	4.8	25.2	7.2	2.1	30.3	6.4	2.1	30.2	5.4	2.0	28.5	7.9	3.7	29.2	3.3	1.8	27.8	1.7	1.2	11.7
Market St&9th St	0.9	0.4	9.1	2.2	2.1	28.0	2.0	1.9	25.3	4.2	1.9	32.6	4.7	2.0	32.9	2.9	2.0	29.4	2.3	1.3	30.2	1.5	2.0	27.3	0.4	0.5	11.6
Market St&8th St	1.2	0.3	10.0	3.5	2.1	29.4	6.9	3.7	28.5	5.5	2.6	35.5	5.5	2.1	36.2	5.2	2.6	32.0	5.0	2.3	32.9	2.3	2.4	27.2	0.8	1.0	11.4
Market St&7th St	3.4	1.0	12.4	7.6	1.9	35.1	9.7	2.2	36.0	7.0	3.1	39.4	6.5	2.6	40.2	4.7	2.1	34.6	4.0	2.1	34.8	2.6	2.3	27.5	1.3	1.5	11.2
Market St&6th St	0.9	0.7	12.6	2.7	1.6	36.2	3.3	2.5	36.8	3.4	2.5	40.3	3.4	3.0	40.6	2.5	2.5	34.6	1.6	4.1	32.3	1.4	2.9	26.0	0.5	1.4	10.3
Market St&5th St	3.1	1.2	14.5	7.2	3.4	40.0	10.7	6.2	41.3	12.7	6.9	46.1	10.9	7.3	44.2	8.5	9.0	34.1	5.9	11.7	26.5	4.8	8.7	22.1	1.1	3.5	7.9
Market St&4th St	1.5	1.1	14.9	5.7	2.9	42.8	14.0	4.4	50.9	16.4	6.4	56.1	12.1	5.1	51.2	12.9	4.9	42.1	9.5	4.9	31.1	12.4	3.9	30.6	1.8	2.2	7.5
Market St&3rd St	2.6	2.9	14.6	4.2	6.7	40.3	3.9	6.8	48.0	6.9	7.2	55.8	5.9	5.1	52.0	5.5	3.4	44.2	5.1	4.2	32.0	4.9	4.3	31.2	1.0	1.6	6.9
Market St&New Montgomery St	1.5	1.2	14.9	4.5	5.3	39.5	3.6	2.3	49.3	4.1	2.9	57.0	3.0	2.7	52.3	2.6	2.5	44.3	2.4	1.7	32.7	1.3	0.9	31.6	0.6	0.4	7.1
Market St&1st St	1.2	1.3	14.8	3.1	5.7	36.9	2.4	3.0	48.7	4.2	2.7	58.5	3.5	2.3	53.5	2.7	1.8	45.2	3.5	1.8	34.4	1.6	1.9	31.3	0.6	1.1	6.6
Market St&Main St	8.0	1.8	21.0	15.1	3.8	48.2	11.4	2.6	57.5	9.5	2.4	65.6	7.5	2.0	59.0	5.0	2.0	48.2	5.8	1.1	39.1	3.4	2.3	32.4	0.9	0.7	6.8
Ferry Plaza	1.4	0.9	21.5	2.8	1.9	49.1	2.5	2.9	57.1	2.0	4.2	63.4	1.4	2.5	57.8	1.6	2.6	47.2	1.3	2.4	38.0	1.1	2.6	30.9	0.5	0.1	7.2
The Embarcadero&Ferry Term	5.5	0.2	26.8	11.8	0.8	60.1	16.6	2.1	71.6	14.6	3.9	74.1	17.1	3.2	71.8	16.1	2.3	61.0	6.9	1.0	43.9	9.2	1.6	38.5	2.1	0.2	9.1
The Embarcadero&Washington St	0.5	0.1	27.2	0.6	0.3	60.4	0.5	0.3	71.8	2.0	0.7	75.4	2.7	0.4	74.2	2.8	0.6	63.2	1.9	0.0	45.8	1.5	0.2	39.8	0.3	0.1	9.3
The Embarcadero&Broadway	0.2	0.3	27.1	0.3	1.2	59.5	0.9	0.6	72.1	2.0	0.6	76.8	1.8	0.5	75.4	1.2	0.9	63.5	0.6	0.7	45.7	1.0	0.4	40.4	0.0	0.1	9.2
The Embarcadero&Green St	0.1	1.1	26.1	0.3	2.7	57.1	0.6	1.2	71.5	0.4	1.0	76.2	0.5	0.3	75.7	0.5	0.6	63.4	0.1	0.3	45.5	0.5	0.6	40.3	0.1	0.2	9.1
The Embarcadero&Greenwich St	0.2	1.6	24.7	0.0	3.8	53.3	0.5	2.4	69.6	0.6	1.8	75.0	0.7	1.3	75.1	0.7	1.4	62.7	1.6	1.0	46.1	0.2	1.0	39.5	0.0	0.3	8.8
The Embarcadero & Sansome St	0.2	1.9	23.0	0.4	6.0	47.7	0.7	4.8	65.5	0.7	2.8	72.9	0.6	1.7	73.9	0.3	2.5	60.5	0.8	0.6	46.3	0.3	1.3	38.5	0.1	0.2	8.7
The Embarcadero&Bay St	0.0	2.2	20.8	0.3	9.8	38.2	0.1	11.3	54.3	1.9	12.0	62.8	3.0	6.0	70.9	3.7	6.3	57.9	2.1	2.6	45.8	1.1	1.9	37.7	0.0	0.5	8.2
The Embarcadero&Stockton St	0.0	6.0	14.8	0.2	17.3	21.1	1.0	33.1	22.2	2.0	38.0	26.8	5.0	39.3	36.7	5.1	32.2	30.8	6.8	22.8	29.8	3.9	19.9	21.7	0.0	2.0	6.2
Jefferson St&Powell St	0.0	3.7	11.1	0.2	6.1	15.2	0.4	5.5	17.1	1.2	7.3	20.7	2.1	9.8	28.9	1.5	7.6	24.7	0.8	6.9	23.7	2.9	5.9	18.7	0.0	1.8	4.4
Jefferson St&Taylor St	0.1	2.6	8.6	0.2	5.1	10.3	0.2	4.7	12.6	0.5	4.9	16.3	1.1	5.4	24.6	1.1	7.2	18.6	1.3	8.4	16.6	0.9	4.1	15.5	0.0	1.4	3.0
Jones St&Beach St	0.0	8.6	0.0	0.0	10.3	0.0	0.0	12.6	0.0	0.0	16.3	0.0	0.0	24.6	0.0	0.0	18.6	0.0	0.0	16.6	0.0	0.0	15.5	0.0	0.0	3.0	0.0
Average Passengers per Trip	42.0			106.8			123.9			136.8			134.8			121.5			107.0			90.8			26.4		
Maximum Passenger Load	27.2			60.4			72.1			77.0			75.5			63.5			46.3			40.4			11.7		
Maximum Load Point (Leaving)	Embar&Wshngtn			Embar&Wshngtn			Embarc&Brdwy			Embarc&Brdwy			Embarc&Green			Embarc&Brdwy			Embar&Sansome			Embarc&Brdwy			Market&SVNess		

F-MARKET - SUMMER
WEEKDAY - OUTBOUND - JUN08 SIGNUP
DATA GATHERED JUL08-AUG08

AVERAGE ON, OFF, PASSENGER LOAD

	EARLY AM PEAK 4:00AM-6:59AM			AM PEAK 7:00AM-08:59AM			LATE AM PEAK 9:00AM-9:59AM			MIDDAY 10:00AM-1:59PM			EARLY PM PEAK 2:00PM-3:59PM			PM PEAK 4:00PM-5:59PM			LATE PM PEAK 6:00PM-6:59PM			EARLY EVENING 7:00PM-9:59PM			LATE EVENING 10:00PM-1:59AM		
LOCATION	AVG ON	AVG OFF	AVG LOAD	AVG ON	AVG OFF	AVG LOAD	AVG ON	AVG OFF	AVG LOAD	AVG ON	AVG OFF	AVG LOAD	AVG ON	AVG OFF	AVG LOAD	AVG ON	AVG OFF	AVG LOAD	AVG ON	AVG OFF	AVG LOAD	AVG ON	AVG OFF	AVG LOAD	AVG ON	AVG OFF	AVG LOAD
Jones St&Beach St	1.9	0.0	1.9	6.0	0.0	6.0	7.8	0.0	7.8	13.6	0.0	13.6	36.3	0.0	36.3	45.1	0.0	45.1	37.8	0.0	37.8	47.3	0.0	47.3	11.8	0.0	11.8
Beach St&Mason St	1.3	0.1	3.1	2.7	0.0	8.7	3.9	0.1	11.6	6.3	0.1	19.8	10.0	0.0	46.3	17.8	0.5	62.4	14.8	0.1	52.5	12.1	0.4	59.0	4.7	0.2	16.3
Beach St&Stockton St	1.8	0.0	4.9	4.7	0.2	13.2	3.9	0.0	15.5	11.7	0.5	31.0	23.4	0.7	69.0	16.5	0.6	78.3	20.2	0.2	72.5	19.3	0.6	77.7	8.8	0.1	25.0
The Embarcadero&Bay St	1.9	0.0	6.8	1.5	0.9	13.8	1.6	0.8	16.3	6.7	0.9	36.8	5.4	0.6	73.8	5.1	0.4	83.0	10.0	1.1	81.4	4.3	0.2	81.8	1.5	0.2	26.3
The Embarcadero&Sansome St	1.6	0.0	8.4	1.4	0.2	15.0	1.2	0.3	17.2	2.3	0.4	38.7	1.8	0.2	75.4	1.2	0.6	83.6	2.8	0.0	84.2	1.7	0.2	83.3	0.3	0.0	26.6
The Embarcadero&Greenwich St	0.1	0.1	8.4	0.3	0.0	15.3	0.7	0.3	17.6	1.1	0.1	39.7	1.5	0.6	76.3	1.6	0.4	84.8	0.8	0.0	85.0	0.9	0.2	84.0	0.7	0.0	27.3
The Embarcadero&Green St	0.0	0.0	8.4	0.4	0.0	15.7	0.6	0.2	18.0	0.3	0.3	39.7	0.5	0.2	76.6	0.2	0.3	84.7	0.7	0.2	85.5	0.1	0.4	83.7	0.1	0.0	27.4
The Embarcadero&Broadway	0.3	0.0	8.7	0.3	0.3	15.7	0.1	0.2	17.9	0.5	0.3	39.9	0.6	1.7	75.5	0.3	0.9	84.1	0.3	1.7	84.1	0.7	1.6	82.8	0.1	0.1	27.4
The Embarcadero&Washington St	0.1	0.6	8.2	0.1	1.4	14.4	0.3	0.4	17.8	0.4	3.5	36.8	1.0	6.9	69.6	0.3	6.5	77.9	0.0	5.1	79.0	0.3	3.5	79.6	0.1	0.4	27.1
The Embarcadero&Ferry Building	0.8	0.8	8.2	3.9	3.1	15.2	1.6	4.7	14.7	2.9	7.5	32.2	3.0	13.0	59.6	3.0	12.9	68.0	2.5	11.7	69.8	1.1	11.1	69.6	0.1	1.8	25.4
Ferry Plaza	0.6	0.6	8.2	0.6	1.9	13.9	1.5	1.2	15.0	1.9	1.7	32.4	1.3	1.4	59.5	1.6	2.1	67.5	1.0	2.9	67.9	0.4	1.1	68.9	0.2	0.6	25.0
Market St&Drumm St	0.3	2.5	6.0	1.2	2.7	12.4	2.9	3.2	14.7	3.7	6.4	29.7	4.8	12.5	51.8	4.7	17.7	54.5	3.5	16.7	54.7	3.0	18.2	53.7	1.7	8.3	18.4
Market St&Battery St	2.1	0.5	7.6	1.9	1.5	12.8	2.1	0.7	16.1	3.6	2.2	31.1	3.2	2.3	52.7	2.9	2.5	54.9	3.3	2.6	55.4	2.2	2.6	53.3	0.9	0.8	18.5
Market St&2nd St	0.5	0.7	7.4	0.9	2.4	11.3	1.8	2.4	15.5	2.2	2.2	31.1	2.0	4.0	50.7	2.6	3.2	54.3	3.3	2.1	56.6	1.9	4.5	50.7	1.0	0.4	19.1
Market St&Kearny St	3.3	0.5	10.2	2.1	1.6	11.8	3.3	2.0	16.8	3.4	4.4	30.1	3.5	5.4	48.8	4.2	5.4	53.1	4.1	7.1	53.6	3.2	4.4	49.5	1.7	0.7	20.1
Market St&Stockton St	2.2	0.5	11.9	2.0	1.7	12.1	3.8	3.7	16.9	4.2	10.0	24.3	5.7	18.0	36.5	5.7	19.8	39.0	8.2	17.1	44.7	5.5	16.4	38.6	1.9	3.9	18.1
Market St&5th St North	2.1	1.8	12.2	2.9	3.3	11.7	6.6	2.7	20.8	7.7	7.5	24.5	8.2	12.5	32.2	9.6	15.0	33.6	9.8	16.2	38.3	11.2	13.8	36.0	2.0	6.5	13.6
Market St&Taylor St	2.3	0.8	13.7	1.4	1.2	11.9	1.8	1.7	20.9	2.5	2.3	24.7	2.3	2.4	32.1	2.2	2.0	33.8	2.4	2.5	38.2	1.9	1.9	36.0	0.4	1.3	12.7
Market St&7th St North	1.5	3.8	11.4	1.2	3.2	9.9	2.1	3.1	19.9	3.4	4.2	23.9	1.8	4.6	29.3	1.8	5.1	30.5	2.6	3.5	37.3	2.3	6.0	32.3	1.3	2.6	11.4
Market St&Hyde St	1.1	1.9	10.6	2.8	2.1	10.6	1.9	4.0	17.8	3.4	4.5	22.8	3.1	6.4	26.0	2.3	5.0	27.8	1.4	6.2	32.5	1.1	9.7	23.7	0.8	2.8	9.4
Market St&Larkin St	0.3	1.5	9.4	1.0	1.6	10.0	1.2	1.9	17.1	1.9	2.8	21.9	1.8	3.2	24.6	1.7	3.8	25.7	1.1	1.9	31.7	1.4	2.9	22.2	0.3	0.7	9.0
Market St&Van Ness Ave	1.2	4.1	6.5	1.6	3.3	8.3	1.6	4.0	14.7	2.7	5.3	19.3	2.8	4.8	22.6	3.5	5.2	24.0	2.7	4.0	30.4	1.8	2.7	21.3	1.9	1.5	9.4
Market St&Gough St	0.2	1.1	5.6	0.3	1.4	7.2	0.6	1.8	13.5	1.6	2.5	18.4	1.2	3.7	20.1	2.0	5.1	20.9	0.7	4.3	26.8	0.9	3.7	18.5	0.5	1.3	8.6
Market St&Laguna St	0.1	0.8	4.9	0.4	1.1	6.5	0.7	1.6	12.6	0.7	2.6	16.5	0.8	4.1	16.8	0.9	4.9	16.9	1.2	4.8	23.2	0.6	2.3	16.8	0.2	0.8	8.0
Market St&Buchanan St	0.3	1.7	3.5	0.3	1.0	5.8	0.1	2.0	10.7	0.2	2.9	13.8	0.9	3.2	14.5	0.4	2.5	14.8	0.1	2.8	20.5	0.1	1.4	15.5	0.1	0.7	7.4
Market St&Church St	0.2	0.7	3.0	0.3	1.7	4.4	0.3	3.5	7.5	0.8	5.8	8.8	1.1	7.0	8.6	1.0	7.1	8.7	0.7	8.5	12.7	0.3	5.1	10.7	0.1	2.7	4.8
Market St&Sanchez St	0.0	0.9	2.1	0.1	0.7	3.8	0.0	0.3	7.2	0.2	1.7	7.3	0.1	2.2	6.5	0.3	2.6	6.4	0.2	1.2	11.7	0.2	2.4	8.5	0.1	1.0	3.9
Market St&Noe St	0.0	0.4	1.7	0.0	0.8	3.0	0.0	1.5	5.7	0.1	2.1	5.3	0.2	3.2	3.5	0.2	3.6	3.0	0.1	3.6	8.2	0.0	2.6	5.9	0.0	0.8	3.1
17th St&Castro St	0.0	1.7	0.0	0.0	3.0	0.0	0.0	5.7	0.0	0.0	5.3	0.0	0.0	3.5	0.0	0.0	3.0	0.0	0.0	8.2	0.0	0.0	5.9	0.0	0.0	3.1	0.0
Average Passengers per Trip	28.1			42.3			54.0			90.0			128.3			138.7			136.3			125.8			43.3		
Maximum Passenger Load	13.7			15.7			20.9			39.9			76.6			84.8			85.5			84.0			27.4		
Maximum Load Point (Leaving)	Market&Taylor			Embarc&Green			Market&Taylor			Embarc&Brdwy			Embarc&Green			Embar&Grnwich			Embarc&Green			Embar&Grnwich			Embarc&Green		

F-MARKET - SUMMER
WEEKDAY - INBOUND - JUN08 SIGNUP
DATA GATHERED JUL08-AUG08

TOTAL ON, OFF, PASSENGER LOAD

	EARLY AM PEAK 4:00AM-6:59AM			AM PEAK 7:00AM-08:59AM			LATE AM PEAK 9:00AM-9:59AM			MIDDAY 10:00AM-1:59PM			EARLY PM PEAK 2:00PM-3:59PM			PM PEAK 4:00PM-5:59PM			LATE PM PEAK 6:00PM-6:59PM			EARLY EVENING 7:00PM-9:59PM			LATE EVENING 10:00PM-1:59AM			TOTAL DAY 4:00AM-1:59AM		
LOCATION	TOTL ON	TOTL OFF	TOTL LOAD	TOTL ON	TOTL OFF	TOTL LOAD	TOTL ON	TOTL OFF	TOTL LOAD	TOTL ON	TOTL OFF	TOTL LOAD	TOTL ON	TOTL OFF	TOTL LOAD	TOTL ON	TOTL OFF	TOTL LOAD	TOTL ON	TOTL OFF	TOTL LOAD	TOTL ON	TOTL OFF	TOTL LOAD	TOTL ON	TOTL OFF	TOTL LOAD	TOTL ON	TOTL OFF	TOTL LOAD
17th St&Castro St	18	0	18	97	0	97	40	0	40	248	0	248	106	0	106	149	0	149	58	0	58	133	0	133	60	0	60	908	0	908
Market St&Noe St	2	0	19	33	0	131	11	1	51	47	0	294	23	1	128	36	2	183	27	1	84	38	0	171	17	0	77	233	4	1,137
Market St&Sanchez St	3	0	22	33	0	164	8	1	59	52	3	344	25	1	151	29	3	209	15	0	99	46	0	217	5	1	80	216	9	1,345
Market St&Church St	10	2	30	112	4	271	59	2	116	146	19	470	79	10	220	72	20	261	50	10	139	78	10	286	29	4	106	634	81	1,898
Market St&Dolores St	6	0	36	39	1	309	11	1	127	85	6	550	49	4	265	60	5	317	13	2	150	48	3	330	14	2	118	326	24	2,201
Market St&Guerrero St	8	0	44	61	4	365	10	4	133	83	17	616	34	10	289	36	11	342	13	10	153	15	6	340	11	4	125	270	64	2,407
Market St&Gough St	16	0	60	55	13	407	20	4	149	105	28	693	53	18	324	54	20	377	34	11	175	43	15	368	16	6	134	395	114	2,688
Market St&South Van Ness Av	14	5	69	61	64	405	31	29	151	198	58	833	80	26	378	81	30	428	55	26	204	46	25	389	20	14	140	586	277	2,997
Market St&9th St	7	3	73	32	30	406	12	11	152	116	52	896	59	25	411	44	30	441	16	9	211	21	28	382	5	6	139	311	195	3,112
Market St&8th St	10	2	80	51	30	426	41	22	171	151	72	976	69	26	453	78	39	480	35	16	230	32	34	381	10	12	137	477	254	3,333
Market St&7th St	27	8	99	110	28	509	58	13	216	193	85	1,083	81	33	503	71	32	519	28	15	244	36	32	385	16	18	134	620	263	3,692
Market St&6th St	7	6	101	39	23	525	20	15	221	94	69	1,109	43	38	508	38	38	519	11	29	226	20	41	364	6	17	124	276	274	3,696
Market St&5th St	25	10	116	104	49	580	64	37	248	349	190	1,269	136	91	553	128	135	512	41	82	186	67	122	309	13	42	95	928	758	3,866
Market St&4th St	12	9	119	83	42	621	84	26	305	451	176	1,543	151	64	640	194	74	632	67	34	218	174	55	428	22	26	90	1,236	506	4,596
Market St&3rd St	21	23	117	61	97	584	23	41	288	190	198	1,536	74	64	650	83	51	663	36	29	224	69	60	437	12	19	83	567	583	4,582
Market St&New Montgomery St	12	10	119	65	77	573	22	14	296	113	80	1,571	38	34	654	39	38	665	17	12	229	18	13	442	7	5	85	330	281	4,633
Market St&1st St	10	10	118	45	83	535	14	18	292	116	74	1,612	44	29	669	41	27	678	25	13	241	22	27	438	7	13	79	323	293	4,662
Market St&Main St	64	14	168	219	55	699	68	16	345	261	66	1,807	94	25	738	75	30	723	41	8	274	48	32	454	11	8	82	880	254	5,288
Ferry Plaza	11	7	172	41	28	712	15	17	343	55	116	1,747	18	31	723	24	39	708	9	17	266	15	36	433	6	1	86	194	292	5,189
The Embarcadero&Ferry Term	44	2	214	171	12	871	100	13	430	402	107	2,043	214	40	898	242	35	915	48	7	307	129	22	539	25	2	109	1,374	239	6,326
The Embarcadero&Washington St	4	1	218	9	4	876	3	2	431	55	19	2,079	34	5	928	42	9	948	13	0	321	21	3	557	4	1	112	184	44	6,468
The Embarcadero&Broadway	2	2	217	4	17	863	5	4	433	55	17	2,117	23	6	943	18	14	953	4	5	320	14	6	566	0	1	110	125	71	6,520
The Embarcadero&Green St	1	9	209	4	39	828	4	7	429	11	28	2,101	6	4	946	8	9	951	1	2	319	7	8	564	1	2	109	42	108	6,456
The Embarcadero&Greenwich St	2	13	198	0	55	773	3	14	418	17	50	2,067	9	16	939	11	21	941	11	7	323	3	14	553	0	4	106	54	194	6,316
The Embarcadero & Sansome St	2	15	184	6	87	692	4	29	393	19	77	2,008	8	21	924	5	38	908	6	4	324	4	18	539	1	2	104	54	292	6,076
The Embarcadero&Bay St	0	18	166	4	142	554	1	68	326	52	330	1,730	38	75	886	56	95	869	15	18	321	15	27	528	0	6	98	180	778	5,478
The Embarcadero&Stockton St	0	48	118	3	251	306	6	199	133	55	1,045	740	63	491	459	77	483	462	48	160	209	55	279	304	0	24	74	305	2,979	2,805
Jefferson St&Powell St	0	30	89	3	88	220	2	33	103	33	201	572	26	123	361	23	114	371	6	48	166	41	83	262	0	22	53	133	741	2,196
Jefferson St&Taylor St	1	21	69	3	74	149	1	28	76	14	135	450	14	68	308	17	108	279	9	59	116	13	57	217	0	17	36	71	566	1,699
Jones St&Beach St	0	69	0	0	149	0	0	76	0	0	448	0	0	308	0	0	279	0	0	116	0	0	217	0	0	36	0	0	1,698	0
Total Boardings by Time Period	336			1,549			743			3,762			1,685			1,823			749			1,271			317			12,235		
Maximum Load Point (Leaving)	Embarc&Wshngtn			Embarc&Wshngtn			Embarc&Brdwy			Embarc&Brdwy			Embarc&Green			Embarc&Brdwy			Embarc&Sansome			Embarc&Brdwy			Market&SVNess			Embarc&Brdwy		

F-MARKET - SUMMER
WEEKDAY - OUTBOUND - JUN08 SIGNUP
DATA GATHERED JUL08-AUG08

TOTAL ON, OFF, PASSENGER LOAD

	EARLY AM PEAK 4:00AM-6:59AM			AM PEAK 7:00AM-08:59AM			LATE AM PEAK 9:00AM-9:59AM			MIDDAY 10:00AM-1:59PM			EARLY PM PEAK 2:00PM-3:59PM			PM PEAK 4:00PM-5:59PM			LATE PM PEAK 6:00PM-6:59PM			EARLY EVENING 7:00PM-9:59PM			LATE EVENING 10:00PM-1:59AM			TOTAL DAY 4:00AM-1:59AM		
LOCATION	TOTL ON	TOTL OFF	TOTL LOAD	TOTL ON	TOTL OFF	TOTL LOAD	TOTL ON	TOTL OFF	TOTL LOAD	TOTL ON	TOTL OFF	TOTL LOAD	TOTL ON	TOTL OFF	TOTL LOAD	TOTL ON	TOTL OFF	TOTL LOAD	TOTL ON	TOTL OFF	TOTL LOAD	TOTL ON	TOTL OFF	TOTL LOAD	TOTL ON	TOTL OFF	TOTL LOAD	TOTL ON	TOTL OFF	TOTL LOAD
Jones St&Beach St	10	0	10	78	0	78	70	0	70	408	0	408	599	0	599	767	0	767	265	0	265	710	0	710	183	0	183	3,088	0	3,088
Beach St&Mason St	7	1	16	35	0	113	35	1	104	189	3	594	165	0	764	303	9	1,061	104	1	368	182	6	885	73	3	253	1,091	23	4,157
Beach St&Stockton St	9	0	25	61	3	172	35	0	140	351	15	930	386	12	1,139	281	10	1,331	141	1	508	290	9	1,166	136	2	388	1,690	51	5,796
The Embarcadero&Bay St	10	0	34	20	12	179	14	7	147	201	27	1,104	89	10	1,218	87	7	1,411	70	8	570	65	3	1,227	23	3	408	578	76	6,297
The Embarcadero&Sansome St	8	0	42	18	3	195	11	3	155	69	12	1,161	30	3	1,244	20	10	1,421	20	0	589	26	3	1,250	5	0	412	206	34	6,469
The Embarcadero&Greenwich St	1	1	42	4	0	199	6	3	158	33	3	1,191	25	10	1,259	27	7	1,442	6	0	595	14	3	1,260	11	0	423	126	26	6,569
The Embarcadero&Green St	0	0	42	5	0	204	5	2	162	9	9	1,191	8	3	1,264	3	5	1,440	5	1	599	2	6	1,256	2	0	425	39	27	6,582
The Embarcadero&Broadway	2	0	44	4	4	204	1	2	161	15	9	1,197	10	28	1,246	5	15	1,430	2	12	589	11	24	1,242	2	2	425	50	96	6,537
The Embarcadero&Washington St	1	3	41	1	18	187	3	4	160	12	105	1,104	17	114	1,148	5	111	1,324	0	36	553	5	53	1,194	2	6	420	44	449	6,132
The Embarcadero&Ferry Building	4	4	41	51	40	198	14	42	132	87	225	966	50	215	983	51	219	1,156	18	82	489	17	167	1,044	2	28	394	292	1,022	5,403
Ferry Plaza	3	3	41	8	25	181	14	11	135	57	51	972	21	23	982	27	36	1,148	7	20	475	6	17	1,034	3	9	388	146	194	5,354
Market St&Drumm St	2	13	30	16	35	161	26	29	132	111	192	891	79	206	855	80	301	927	25	117	383	45	273	806	26	129	285	409	1,294	4,469
Market St&Battery St	11	3	38	25	20	166	19	6	145	108	66	933	53	38	870	49	43	933	23	18	388	33	39	800	14	12	287	334	244	4,559
Market St&2nd St	3	4	37	12	31	147	16	22	140	66	66	933	33	66	837	44	54	923	23	15	396	29	68	761	16	6	296	241	331	4,469
Market St&Kearny St	17	3	51	27	21	153	30	18	151	102	132	903	58	89	805	71	92	903	29	50	375	48	66	743	26	11	312	408	481	4,396
Market St&Stockton St	11	3	60	26	22	157	34	33	152	126	300	729	94	297	602	97	337	663	57	120	313	83	246	579	29	60	281	558	1,418	3,536
Market St&5th St North	11	9	61	38	43	152	59	24	187	231	225	735	135	206	531	163	255	571	69	113	268	168	207	540	31	101	211	905	1,184	3,257
Market St&Taylor St	12	4	69	18	16	155	16	15	188	75	69	741	38	40	530	37	34	575	17	18	267	29	29	540	6	20	197	248	244	3,261
Market St&7th St North	8	19	57	16	42	129	19	28	179	102	126	717	30	76	483	31	87	519	18	25	261	35	90	485	20	40	177	277	532	3,006
Market St&Hyde St	6	10	53	36	27	138	17	36	160	102	135	684	51	106	429	39	85	473	10	43	228	17	146	356	12	43	146	290	631	2,665
Market St&Larkin St	2	8	47	13	21	130	11	17	154	57	84	657	30	53	406	29	65	437	8	13	222	21	44	333	5	11	140	174	314	2,525
Market St&Van Ness Ave	6	21	33	21	43	108	14	36	132	81	159	579	46	79	373	60	88	408	19	28	213	27	41	320	29	23	146	303	518	2,311
Market St&Gough St	1	6	28	4	18	94	5	16	122	48	75	552	20	61	332	34	87	355	5	30	188	14	56	278	8	20	133	138	368	2,080
Market St&Laguna St	1	4	25	5	14	85	6	14	113	21	78	495	13	68	277	15	83	287	8	34	162	9	35	252	3	12	124	82	342	1,820
Market St&Buchanan St	2	9	18	4	13	75	1	18	96	6	87	414	15	53	239	7	43	252	1	20	144	2	21	233	2	11	115	38	273	1,585
Market St&Church St	1	4	15	4	22	57	3	32	68	24	174	264	18	116	142	17	121	148	5	60	89	5	77	161	2	42	74	78	645	1,017
Market St&Sanchez St	0	5	11	1	9	49	0	3	65	6	51	219	2	36	107	5	44	109	1	8	82	3	36	128	2	16	60	20	208	830
Market St&Noe St	0	2	9	0	10	39	0	14	51	3	63	159	3	53	58	3	61	51	1	25	57	0	39	89	0	12	48	10	280	561
17th St&Castro St	0	9	0	0	39	0	0	51	0	0	159	0	0	58	0	0	51	0	0	57	0	0	89	0	0	48	0	0	561	0
Total Boardings by Time Period	141			550			486			2,700			2,117			2,358			954			1,887			671			11,864		
Maximum Load Point (Leaving)	Market&Taylor			Embarc&Green			Market&Taylor			Embarc&Brdway			Embarc&Green			Embarc&Grnwich			Embarc&Green			Embarc&Grnwich			Embarc&Green			Embarc&Green		

F-MARKET
WEEKDAY - INBOUND - JUN08 SIGNUP
DATA GATHERED JUL08-AUG08
AVERAGE LOAD AT MLP

LOCATION	5A-7/	7A-9/	9A-1(	10A-1	2P-4(	4P-6(	6P-7(	7P-1(	10P-1A
17th&Castro	2.2	6.7	6.7	9.0	8.5	9.9	8.3	9.5	5.0
Market&Noe	2.4	9.0	8.5	10.7	10.2	12.2	12.0	12.2	6.4
Mkt&Sanchez	2.8	11.3	9.8	12.5	12.1	13.9	14.1	15.5	6.7
Mkt&Church	3.7	18.7	19.4	17.1	17.6	17.4	19.8	20.4	8.8
Mkt&Dolores	4.5	21.3	21.1	20.0	21.2	21.1	21.4	23.6	9.8
Mkt&Guerrero	5.5	25.2	22.2	22.4	23.1	22.8	21.8	24.3	10.4
Mkt&Gough	7.5	28.1	24.9	25.2	25.9	25.1	25.0	26.3	11.2
Mkt&SVNess	8.6	27.9	25.2	30.3	30.2	28.5	29.2	27.8	11.7
Market&9th St	9.1	28.0	25.3	32.6	32.9	29.4	30.2	27.3	11.6
Market&8th St	10.0	29.4	28.5	35.5	36.2	32.0	32.9	27.2	11.4
Market&7th St	12.4	35.1	36.0	39.4	40.2	34.6	34.8	27.5	11.2
Market&6th St	12.6	36.2	36.8	40.3	40.6	34.6	32.3	26.0	10.3
Market&5th St	14.5	40.0	41.3	46.1	44.2	34.1	26.5	22.1	7.9
Market&4th St	14.9	42.8	50.9	56.1	51.2	42.1	31.1	30.6	7.5
Market&3rd St	14.6	40.3	48.0	55.8	52.0	44.2	32.0	31.2	6.9
Mrkt&N.Mntgmry	14.9	39.5	49.3	57.0	52.3	44.3	32.7	31.6	7.1
Market&1st St	14.8	36.9	48.7	58.5	53.5	45.2	34.4	31.3	6.6
Market&Main	21.0	48.2	57.5	65.6	59.0	48.2	39.1	32.4	6.8
Ferry Plaza	21.5	49.1	57.1	63.4	57.8	47.2	38.0	30.9	7.2
Embar&Ferry	26.8	60.1	71.6	74.1	71.8	61.0	43.9	38.5	9.1
Embar&Wshgtn	27.2	60.4	71.8	75.4	74.2	63.2	45.8	39.8	9.3
Embar&Brdwy	27.1	59.5	72.1	76.8	75.4	63.5	45.7	40.4	9.2
Embar&Green	26.1	57.1	71.5	76.2	75.7	63.4	45.5	40.3	9.1
Embar&Grnwch	24.7	53.3	69.6	75.0	75.1	62.7	46.1	39.5	8.8
Embar&Snsme	23.0	47.7	65.5	72.9	73.9	60.5	46.3	38.5	8.7
Embar&Bay	20.8	38.2	54.3	62.8	70.9	57.9	45.8	37.7	8.2
Embar&Stcktn	14.8	21.1	22.2	26.8	36.7	30.8	29.8	21.7	6.2
Jefferson&Pwll	11.1	15.2	17.1	20.7	28.9	24.7	23.7	18.7	4.4
Jefferson&Tylr	8.6	10.3	12.6	16.3	24.6	18.6	16.6	15.5	3.0
Jones&Beach	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

F-MARKET
WEEKDAY - INBOUND - JUI
DATA GATHERED JUL08-AI
TOTAL BOARDINGS & ALIG

LOCATION	Boading:	Alighting:
17th&Castro	908.3	0.0
Market&Noe	232.8	4.1
Mkt&Sanchez	216.4	8.8
Mkt&Church	634.1	80.5
Mkt&Dolores	326.3	23.7
Mkt&Guerrero	270.2	64.0
Mkt&Gough	395.1	114.4
Mkt&SVNess	586.0	276.9
Market&9th St	310.8	195.4
Market&8th St	476.6	253.5
Market&7th St	619.9	262.9
Market&6th St	276.5	273.7
Market&5th St	928.1	757.8
Market&4th St	1236.1	505.8
Market&3rd St	567.4	582.7
Mrkt&N.Mntgmry	330.3	280.6
Market&1st St	322.8	293.5
Market&Main	880.4	254.4
Ferry Plaza	193.8	292.3
Embar&Ferry	1373.8	239.4
Embar&Wshgtn	184.4	44.2
Embar&Brdwy	125.1	71.4
Embar&Green	42.4	108.3
Embar&Grnwch	54.4	193.7
Embar&Snsme	53.9	291.6
Embar&Bay	180.3	777.8
Embar&Stcktn	305.1	2978.9
Jefferson&Pwll	133.3	740.8
Jefferson&Tylr	70.6	566.2
Jones&Beach	0.0	1697.7

F-MARKET
WEEKDAY - OUTBOUND - JUN08 SIGNUP
DATA GATHERED JUL08-AUG08
AVERAGE LOAD AT MLP

LOCATION	5A-7/	7A-9/	9A-1(	10A-1	2P-4(	4P-6(	6P-7(	7P-1(	10P-1A
Jones&Beach	1.9	6.0	7.8	13.6	36.3	45.1	37.8	47.3	11.8
Beach&Mason	3.1	8.7	11.6	19.8	46.3	62.4	52.5	59.0	16.3
Beach&Stcktn	4.9	13.2	15.5	31.0	69.0	78.3	72.5	77.7	25.0

F-MARKET
WEEKDAY - OUTBOUND - J
DATA GATHERED JUL08-AI
TOTAL BOARDINGS & ALIG

LOCATION	Boading:	Alighting:
Jones&Beach	3088.4	0.0
Beach&Mason	1091.3	22.7
Beach&Stcktn	1690.1	51.3
Embar&Bay	578.0	76.4

Embar&Bay	6.8	13.8	16.3	36.8	73.8	83.0	81.4	81.8	26.3
Embar&Snsme	8.4	15.0	17.2	38.7	75.4	83.6	84.2	83.3	26.6
Embar&Grnwch	8.4	15.3	17.6	39.7	76.3	84.8	85.0	84.0	27.3
Embar&Green	8.4	15.7	18.0	39.7	76.6	84.7	85.5	83.7	27.4
Embar&Brdwy	8.7	15.7	17.9	39.9	75.5	84.1	84.1	82.8	27.4
Embar&Wshngtn	8.2	14.4	17.8	36.8	69.6	77.9	79.0	79.6	27.1
Embar&Ferry	8.2	15.2	14.7	32.2	59.6	68.0	69.8	69.6	25.4
Ferry Plaza	8.2	13.9	15.0	32.4	59.5	67.5	67.9	68.9	25.0
Market&Drumm	6.0	12.4	14.7	29.7	51.8	54.5	54.7	53.7	18.4
Market&Battery	7.6	12.8	16.1	31.1	52.7	54.9	55.4	53.3	18.5
Market&2nd St	7.4	11.3	15.5	31.1	50.7	54.3	56.6	50.7	19.1
Market&Kearny	10.2	11.8	16.8	30.1	48.8	53.1	53.6	49.5	20.1
Market&Stcktn	11.9	12.1	16.9	24.3	36.5	39.0	44.7	38.6	18.1
Market5thStN	12.2	11.7	20.8	24.5	32.2	33.6	38.3	36.0	13.6
Market&Taylor	13.7	11.9	20.9	24.7	32.1	33.8	38.2	36.0	12.7
Market&7thStN	11.4	9.9	19.9	23.9	29.3	30.5	37.3	32.3	11.4
Market&Hyde	10.6	10.6	17.8	22.8	26.0	27.8	32.5	23.7	9.4
Market&Larkin	9.4	10.0	17.1	21.9	24.6	25.7	31.7	22.2	9.0
Mkt&VanNess	6.5	8.3	14.7	19.3	22.6	24.0	30.4	21.3	9.4
Mkt&Gough	5.6	7.2	13.5	18.4	20.1	20.9	26.8	18.5	8.6
Mkt&Laguna	4.9	6.5	12.6	16.5	16.8	16.9	23.2	16.8	8.0
Mkt&Buchanan	3.5	5.8	10.7	13.8	14.5	14.8	20.5	15.5	7.4
Mkt&Church	3.0	4.4	7.5	8.8	8.6	8.7	12.7	10.7	4.8
Mkt&Sanchez	2.1	3.8	7.2	7.3	6.5	6.4	11.7	8.5	3.9
Market&Noe	1.7	3.0	5.7	5.3	3.5	3.0	8.2	5.9	3.1
17th&Castro	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Embar&Snsme	205.9	33.8
Embar&Grnwch	125.6	25.9
Embar&Green	39.2	26.6
Embar&Brdwy	50.5	95.5
Embar&Wshngtn	44.2	448.6
Embar&Ferry	292.2	1021.7
Ferry Plaza	146.1	194.4
Market&Drumm	409.2	1294.1
Market&Battery	334.3	244.4
Market&2nd St	240.7	331.1
Market&Kearny	407.7	480.8
Market&Stcktn	557.5	1417.7
Market5thStN	904.7	1183.6
Market&Taylor	247.8	243.7
Market&7thStN	277.2	531.9
Market&Hyde	290.0	630.7
Market&Larkin	174.3	314.5
Mkt&VanNess	303.3	517.8
Mkt&Gough	138.3	368.4
Mkt&Laguna	82.0	342.2
Mkt&Buchanan	37.7	273.3
Mkt&Church	77.7	645.2
Mkt&Sanchez	20.0	207.7
Market&Noe	10.4	279.5
17th&Castro	0.0	560.5

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May 13, 2011

File Ref: SCH # 2011032066

Mike Gougherty
San Francisco Bay Area Water Emergency Transit Authority
Pier 9, Suite 111, The Embarcadero
San Francisco, CA 94111

Subject: Notice of Preparation (NOP) for a Joint Draft Environmental Impact Report/Draft Environmental Impact Statement (DEIR/DEIS) for Downtown San Francisco Ferry Terminal Expansion Project, San Francisco County

Dear Mr. Gougherty:

The California State Lands Commission (CSLC) staff has reviewed the subject NOP for a DEIR/DEIS for the Downtown San Francisco Ferry Terminal Expansion Project (Project), which is being prepared by the San Francisco Bay Area Water Emergency Transit Authority (WETA). WETA, as the agency with authority over ferry operations and related facilities in San Francisco, is the lead agency under the California Environmental Quality Act (CEQA) (Public Resources Code [PRC] § 21000 et seq.), and the Federal Transit Authority (FTA) is the lead agency under the National Environmental Policy Act (NEPA) (42 U.S.C. § 4321 et seq.). CSLC staff has prepared these comments as a trustee agency because of its trust responsibility for projects that could directly or indirectly affect sovereign lands, their accompanying Public Trust resources or uses, and the public easement in navigable waters. Additionally, if the Project involves dredging on granted sovereign lands, the CSLC will act as a responsible agency.

CSLC Jurisdiction and Public Trust Lands

The CSLC has jurisdiction and management authority over all ungranted tidelands, submerged lands, and the beds of navigable rivers, sloughs, lakes, etc. The CSLC has certain residual and review authority for tide and submerged lands legislatively granted in trust to local jurisdictions (PRC § 6301, § 6306). All tide and submerged lands, granted or ungranted, as well as navigable rivers, sloughs, etc., are impressed with the Common Law Public Trust.

As general background, the State of California acquired sovereign ownership of all tidelands and submerged lands and beds of navigable waterways upon its admission to the United States in 1850. The State holds these lands for the benefit of all people of the State for statewide Public Trust purposes, which include waterborne commerce,

navigation, fisheries, water-related recreation, habitat preservation and open space. On tidal waterways, the State's sovereign fee ownership extends landward to the mean high tide line, except for fill or artificial accretion. On navigable non-tidal waterways, the State holds fee ownership of the bed landward to the ordinary low water mark and a Public Trust easement landward to the ordinary high water mark. Such boundaries may not be readily apparent from present day site inspections.

The proposed Project is located on sovereign tide and submerged lands that have been transferred, in trust, to the San Francisco Port District (District), pursuant to Chapter 1333, Statutes of 1968 and as amended, with minerals reserved to the State. The NOP notes that one of the primary areas of investigation for the DEIR/DEIS will be dredging and bay fill requirements. If dredging is proposed as an element of this Project, the District must submit an application to the CSLC. Applications may be found on the CSLC website at http://www.slc.ca.gov. To streamline reviews by the multiple agencies with approval authority over dredging in the San Francisco Bay Area, WETA should also consult with the Dredged Material Management Office (DMMO) early in the process. Information on the DMMO may be found at http://www.spn.usace.army.mil/conops/dmmo.htm.

Project Description

As described in the NOP, WETA proposes to improve and expand gates and boarding areas and enhance emergency response capabilities at the Downtown San Francisco Ferry Terminal to meet the agency's objectives and needs as follows:

- Accommodate WETA's projected increase in ferry ridership and related ferry arrivals and departures from the Downtown San Francisco Ferry Terminal;
- Provide a viable alternative mode of transportation that accommodates projected increases in transbay trips, and helps alleviate congestion over the Bay Bridge and through the Bay Area Rapid Transit (BART) Transbay Tube;
- Address WETA's and the Port of San Francisco's (Port's) emergency response needs;
- Establish a circulation plan and improved signage that provides clear pedestrian routes for ferry to bus and ferry to rail transfers, as well as safe routes for bikes, emergency vehicles, and delivery trucks to enter, park and exit the area;
- Provide necessary landside improvements, such as designated weather-protected areas for waiting and queuing, ticket machines and fare collection equipment, improved lighting, and improved boarding and arrival/departure information to serve ferry patrons and to enhance the Ferry Building as the central point of embarkation for ferries on San Francisco Bay; and
- Enhance the area's public access and open space with design features that create attractive, safe daytime and nighttime public spaces for both ferry patrons and other users of the Ferry Building area.

CSLC staff understands that the Project would include the following components:

- Demolition and removal of Pier ½ and Pier 2;
- Construction of Gate A in the north basin, and Gates F and G in the south basin;
- Installation of boarding area amenities such as weather-protected areas for queuing, ticket machines and fare collection equipment, improved lighting, and ferry boarding and arrival/departure information signs;
- Widening of ferry access pathways along existing pedestrian promenades, and separation of ferry patron queuing from other pedestrian and vehicular movements where possible;
- Improved wayfinding signage in the vicinity of the Ferry Building, which will indicate ferry boarding areas and transit connections; and
- Filling in the lagoon between the Ferry and Agriculture Buildings to prepare for and accommodate staging and circulation of evacuees following a catastrophic event.

The project is located at the San Francisco Ferry Building, on Port property between Pier 1 on the north and Pier 14 on the south, and includes the Ferry Building, ferry gate, and the Ferry Plaza.

Environmental Review

CSLC staff requests that the following potential impacts be analyzed in the DEIR/DEIS.

Biological Resources

1. Sensitive Species: WETA should conduct queries of the California Department of Fish and Game's (DFG) California Natural Diversity Database (CNDDB) and U.S. Fish and Wildlife Service's (USFWS) Special Status Species Database to identify any special-status plant or wildlife species that may occur in the Project area. Additionally, WETA should consult early in the process with appropriate staff at DFG and the San Francisco Bay Conservation and Development Commission (BCDC) to identify species of concern. Turbidity, siltation, entrainment, burial and other physical effects of dredging, in particular, may impact protected or economically important fish such as salmonids, longfin smelt, Sacramento splittail, and Pacific herring. The DEIR/DEIS should analyze the potential for such species to occur in the Project area and, if impacts to special-status species are found to be significant, identify feasible mitigation measures.

2. Invasive Species: One of the major ecological stressors in the San Francisco Bay is introduced species. Therefore, when considering the Project's biological impacts, the DEIR/DEIS should analyze the Project's potential to introduce or spread Invasive species, such as the Quagga mussel, into high-traffic and sensitive areas; if any impact is determined significant, mitigation measures could include quarantine of equipment and methods of early detection and early response.

3. Construction Noise: The DEIR/DEIS should also evaluate noise and vibration impacts on fish and birds from construction activities in the water and for land-side supporting structures. Mitigation measures, if found necessary, could include species-specific work windows as defined by DFG, USFWS, and the National Oceanic and Atmospheric Administration Fisheries Service (NOAA Fisheries). Staff recommends early consultation with these agencies in order to minimize the impacts of the Project on sensitive species.

Climate Change

4. Greenhouse Gases: A greenhouse gas (GHG) emissions analysis consistent with the California Global Warming Solutions Act (AB 32) and required by section 15064.4 of the CEQA Guidelines[1] should be included in the DEIR/DEIS. This analysis should identify a threshold for significance for GHG emissions, calculate the level of GHGs that will be emitted as a result of construction and ultimate build-out of the Project, determine the significance of the impacts of those emissions, and, if impacts are significant, identify mitigation measures that would reduce them to less than significant. The analysis in the DEIR/DEIS should pay particular attention to the possibility of cumulative impacts of GHG emissions.

5. Sea Level Rise: The DEIR/DEIS should also consider the effects of sea level rise on all resource categories potentially affected by the proposed Project. At its meeting on December 17, 2009, the CSLC approved the recommendations made in a previously requested staff report, "A Report on Sea Level Rise Preparedness" (Report), which assessed the degree to which the CSLC's grantees and lessees have considered the eventual effects of sea level rise on facilities located within the CSLC's jurisdiction. (The Report can be found on the CSLC's website, http://www.slc.ca.gov.) The Report directs CSLC staff to consider the effects of sea level rise on hydrology, soils, geology, transportation, recreation, and other resource categories in all environmental determinations associated with CSLC leases. This consideration is consistent with the CEQA Guidelines, which direct agencies to identify and, if significant, mitigate the environmental effects of proposed projects; "effects" refers not only to direct, immediate impacts, but also to "indirect or secondary effects which are caused by the project and are later in time or farther removed in distance, but are still reasonably foreseeable" (CEQA Guidelines § 15358(a)(2)). Because it is reasonably foreseeable that long-term coastal facilities will eventually have to operate under higher sea level conditions, the eventual effects of the facilities' operations under those conditions are also reasonably foreseeable and must be considered in the Project's CEQA analysis.

   Please note that, when considering lease applications, CSLC staff is directed to (1) request information from applicants concerning the potential effects of sea

[1] The "CEQA Guidelines" are found in Title 14 of the California Code of Regulations, commencing with section 15000.

level rise on their proposed projects, (2) if applicable, require applicants to indicate how they plan to address sea level rise and what adaptation strategies are planned during the projected life of their projects, and (3) where appropriate, recommend project modifications that would eliminate or reduce potentially adverse impacts from sea level rise, including adverse impacts on public access.

Cultural Resources

6. Submerged Resources: The DEIR/DEIS should evaluate the possibility that submerged cultural resources are located in the Project area. A check of the CSLC Shipwrecks Database resulted in three vessels in or near the Project area:

   - *Alice Garrett*, sank March 4, 1888. According to one account, the vessel broke free from her moorings, drifted to Stewart (Steuart?) Wharf and capsized (Don B. Marshall, California Shipwrecks, Footsteps in the Sea, Superior Publishing Co., Seattle, 1978, p. 75). Another account states that the *Alice Garrett* was a hulk at the time, serving as a quarantine ship for passengers from the *City of Peking* when the vessel was swamped in high waves after breaking free from its moorings (Chambliss, William H. (1895): "Chambliss' Diary; Or, Society As It Really Is", from *"California as I Saw It:" First-Person Narratives of California's Early Years, 1849–1900*, New York, Library of Congress, as recorded at the San Francisco Genealogy website, as published in Wikipedia at http://en.wikipedia.org/wiki/SS_City_of_Peking#cite_note-17). Both accounts indicate that no lives were lost. CSLC files contain no additional information on this vessel.

   - *Helen Hensley*, steamship, boiler explosion January 19, 1854, at the Jackson Street Wharf, killing two persons (Marshall, p. 77). Marshall indicates that this vessel was refloated or salvaged. Numerous references to the vessel after this date appear to confirm the vessel returned to active service.

     Information on the 1858 trip:
     http://www.yosemite.ca.us/library/ralston-fry_wedding/
     Helen Hensley photograph:
     http://content.cdlib.org/ark:/13030/kt467nc334/?layout=metadata&brand=calisphere
     Report of overhaul in 1864:
     http://cdnc.ucr.edu/cdnc/cgi-bin/cdnc?a=d&d=SDU18640830.2.9.3&cl=CL2.1864.08&srpos=0&dliv=none&st=1&e=-------en-logical-20--1-----all---

   - *West Wind*, schooner, sank January 5, 1876, in a collision with the *New World* at San Francisco Wharf; vessel and cargo of cement were reported a total loss (Marshall, p. 80). CSLC files contain no additional information on this vessel.

7. Please note that, although the CSLC database reflects a search of many published records, in most cases it does not represent actual fieldwork, and locations based on historic accounts may be inaccurate. The location of many shipwrecks remains unknown. Additionally, some listed vessels were re-floated or salvaged. Therefore, WETA should not rely on information from the CSLC Shipwrecks Database to determine the presence or absence of cultural resources.

   The CSLC staff recommends WETA consult historians, maritime archaeologists, and others with special knowledge of the Project area. A valuable resource on buried ships and historic wharves in San Francisco is the map and information at http://www.sfgenealogy.com/sf/history/hgshp1.htm.

8. Please be aware that any submerged archaeological site or submerged historic resources that has remained in state waters for more than 50 years is presumed to be significant (PRC § 6313(c)).

9. The DEIR/DEIS should also mention that the title to all abandoned shipwrecks, archaeological sites, and historic or cultural resources on or in the tide and submerged lands of California is vested in the State and under the jurisdiction of the CSLC. Mitigation measures should be developed to address any submerged cultural resources that may be affected by the proposed Project and any unanticipated discoveries during the Project's construction. CSLC staff would like to review the proposed mitigation measures and requests that WETA consult with CSLC staff, should any cultural resources be discovered during construction of the proposed Project.

Hydrology and Water Quality

10. Dredging and Construction Disturbance: WETA should disclose and analyze the Project's potential to adversely affect water quality. Such impacts are likely to include increased turbidity and sedimentation from dredging, fill, and other in-water construction work, and potential pollution from worksite spills or mobilization of pollutants from the dredged soils. For any effects found to be potentially significant, the DEIR/DEIS should identify feasible mitigation measures that would avoid or lessen such effects.

Recreation

11. Bay Recreation: Both locals and visitors from elsewhere in the state utilize the San Francisco Bay for a variety of recreational activities such as fishing and, notably, boating. As public access to and recreation on State lands are key concerns of the Public Trust Doctrine, CSLC staff requests that the DEIR/DEIS analyze the Project's short-term and long-term impacts on recreation resources, both from construction and from permanent increased ferry service and

operations. For any significant effects, the DEIR/DEIS should identify feasible mitigation measures to avoid, lessen or compensate for impacts.

Additional Review

12. Adequate Mitigation: To avoid the improper deferral of mitigation, mitigation measures should either be presented as specific, feasible, enforceable obligations, or should be presented as formulas containing "performance standards which would mitigate the significant effect of the project and which may be accomplished in more than one specified way" (CEQA Guidelines § 15126.4(b)).

13. Cumulative Effects: The DEIR/DEIS should identify and include a discussion of potential cumulative impacts created by other present and proposed projects, such as the America's Cup races planned for 2012 and 2013, in the San Francisco Bay. If the contribution of the Project's impacts proves "cumulatively considerable" "when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects" (CEQA Guidelines § 15065(a)(3)), the DEIR/DEIS's analysis should include all the elements described in section 15130(b) of the CEQA Guidelines.

Thank you for the opportunity to comment on the NOP for the Project. As a trustee and potentially responsible agency, the CSLC will need to rely on the Final EIR/EIS for the issuance of any new lease as specified above and, therefore, we request that you consider our comments prior to adoption of the EIR/EIS. Please send additional information on the Project to the CSLC staff identified below as plans become finalized.

Please contact Michelle Andersen, Public Land Management Specialist, at (916) 574-0200 or by email at michelle.andersen@slc.ca.gov for information concerning our leasing requirements. For questions concerning the environmental review, please contact Sarah Sugar, Environmental Scientist, at (916) 574-2274 or by e-mail at sarah.sugar@slc.ca.gov.

Sincerely,

Cy R. Oggins, Chief
Division of Environmental Planning
and Management

cc: Office of Planning and Research
Michelle Andersen, CSLC
Sarah Sugar, CSLC

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

May 16, 2011

Debra Jones
Federal Transit Administration
201 Mission Street, Suite 1650
San Francisco, California 94105

Subject: Scoping Comments for Proposed Downtown San Francisco Ferry Terminal Expansion Project, San Francisco, California

Dear Ms. Jones:

The U.S. Environmental Protection Agency (EPA) has reviewed the Notice of Intent (NOI) published in the Federal Register on April 7, 2011 by the Federal Transit Administration (FTA) to prepare a Draft Environmental Impact Statement (DEIS) for the Proposed Downtown San Francisco Ferry Terminal Expansion Project in the City and County of San Francisco, California. FTA and the San Francisco Bay Area Water Emergency Transportation Authority (WETA) are proposing expansion and improvements to the Downtown San Francisco Ferry Terminal at the Port of San Francisco Ferry Building. Our comments are provided pursuant to the National Environmental Policy Act (NEPA), the Council on Environmental Quality's (CEQ) regulations (40 CFR 1500-1508), and Section 309 of the Clean Air Act.

EPA will also coordinate in this project as a "Participating Agency" as defined in Section 6002 of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU). We look forward to working with FTA to ensure that the SAFETEA-LU implementation procedures assist both our agencies in meeting our statutory missions.

EPA appreciates the opportunity to provide comments for preparation of the DEIS for this project. We support the project goals of improved transit service and enhanced emergency response capabilities. Improvements in transit service have the potential to increase transit mode share and reduce air quality impacts from automobile emissions, as well as provide improved service for existing transit riders. Our comments, as described below, focus on the identification of the purpose and need and alternatives for the project, and how the DEIS will address: (1) impacts on water resources, (2) impacts to air quality, (3) green design and operations, (4) environmental justice, and (5) climate change adaptation.

Purpose and Need and Range of Alternatives

The NOI includes the statement, "Recognize the Port's land use planning and development proposals in and around the Ferry Building so as not to preclude, conflict with, or inhibit proposed development plans in the project vicinity" as part of the stated purpose and need. While we encourage FTA and WETA to consider Port plans during planning for the proposed project, we also note the importance of considering impacts to resources in selection of alternatives. FTA and WETA should consider alternatives that may conflict with development plans if those alternatives would avoid or minimize impacts to resources. This is of particular importance where alternatives may impact water resources that may fall under Clean Water Act jurisdiction, which would require avoidance, minimization, and mitigation of impacts to waters.

Water Resources

The project site is located on the shore of San Francisco Bay, and therefore construction, demolition, and fill activities have the potential to impact Bay water quality and shoreline resources. Given the existing water quality impairment of the Bay and these potential impacts, efforts should be made to avoid and minimize impacts to water resources.

The Clean Water Act (CWA) Section 404(b)(1) Guidelines (Guidelines) at 40 CFR Part 230.10(a) state that ". . .no discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences." FTA will need to demonstrate in the DEIS that potential impacts to waters of the United States have been avoided and minimized to the maximum extent practicable prior to obtaining a CWA Section 404 permit (40 CFR 230.10(a) and 230.10(d)). The DEIS should include an assessment of an appropriate scope and detail to identify sensitive areas or aquatic systems with functions highly susceptible to change. If it is determined that a CWA Section 404 individual permit may be required, we recommend that FTA and WETA coordinate the requirements of NEPA and CWA Section 404 to ensure that the thresholds of the CWA Section 404(b)(1) Guidelines are satisfied through the environmental review process. Please contact EPA if you have questions about NEPA/CWA Section 404 integration.

Recommendations:

- Estimate the acreage of waters of the United States within the project area using CWA jurisdictional determinations, which should be submitted to the Army Corps of Engineers for verification. Include the classification, functional condition, and the geographic extent of waters.

- Identify all protected resources with special designations and all special aquatic sites and waters within state, local, and federal protected lands. Additional steps should be taken to avoid and minimize impacts to these areas.

- Provide specific descriptions of proposed activities in CWA regulated waters including grading plans and cross sections.

- Discuss wildlife species that could reasonably be expected to use waters or associated habitat and sensitive plant taxa that are associated with waters or associated habitat.

- Analyze the potential flood flow alteration.

- Analyze the potential water quality impact and potential effects to designated uses.

- Identify specific techniques proposed for minimizing surface water contamination due to increased runoff from additional impervious surfaces.

- If the project will require dredging, identify the depth of dredging operations, and the nature and extent of dredging impacts, including impacts to water quality, bay bottom habitats (i.e., eel grass), and shoreline habitats, in the context of endangered species and essential fish habitat, along with appropriate mitigation. Discuss the proposed plan for disposing of dredged material, required sediment testing, and whether the project will require maintenance dredging.

Avoidance and Minimization Measures

To demonstrate compliance with CWA Guidelines, FTA and WETA should explore onsite alternatives to avoid or minimize impacts to waters.

Recommendations:

- Demonstrate that all potential impacts to waters of the United States have been avoided and minimized. If these resources cannot be avoided, the DEIS analyses should clearly demonstrate how cost, logistical, or technological constraints preclude avoidance and minimization of impacts.

- Temporary and permanent impacts to waters of the United States for each alternative studied should be quantified; for example, acres of waters impacted.

- Identify design measures and modifications to avoid and minimize impacts to water resources. Quantify the benefits achieved for each alternative studied, for example, acres of waters of the United States avoided.

- Include a compensation proposal for unavoidable impacts to CWA regulated waters that complies with new regulations for compensatory mitigation promulgated in April 2007 (40 CFR 230 Subpart J).

Air Quality

The proposed project is located in the San Francisco Bay Area, which is classified as nonattainment for ozone and fine particulate matter ($PM_{2.5}$), and should therefore be included in a conforming transportation plan and transportation improvement program. The DEIS should also include a discussion of potential localized air quality impacts from increased ferry service

and identify opportunities to reduce marine vessel emissions of diesel particulate matter (DPM), such as:

- Use of low and ultra-low sulfur diesel fuel by marine vessels;
- Subsidizing the retrofit of older marine vessels, or requiring vessels with newer, cleaner technology; and
- Providing infrastructure for alternative power options for ferries and other watercraft to reduce diesel emissions related to idling.

The DEIS should also address potential air quality impacts during the construction period. EPA recommends that the following mitigation measures be included in the DEIS to reduce construction emissions:

Fugitive Dust Source Controls:

- Stabilize open storage piles and disturbed areas by covering and/or applying water or chemical/organic dust palliative where appropriate. This applies to both inactive and active sites, during workdays, weekends, holidays, and windy conditions.
- Install wind fencing and phase grading operations where appropriate, and operate water trucks for stabilization of surfaces under windy conditions.
- When hauling material and operating non-earthmoving equipment, prevent spillage and limit speeds to 15 miles per hour (mph). Limit speed of earth-moving equipment to 10 mph.

Mobile and Stationary Source Controls:

- Reduce use, trips, and unnecessary idling from heavy equipment.
- Maintain and tune engines per manufacturer's specifications to perform at EPA certification levels and to perform at verified standards applicable to retrofit technologies. Employ periodic, unscheduled inspections to limit unnecessary idling and to ensure that construction equipment is properly maintained, tuned, and modified consistent with established specifications. The California Air Resources Board has a number of mobile source anti-idling requirements which could be employed. See their website at: http://www.arb.ca.gov/msprog/truck-idling/truck-idling.htm.
- Prohibit any tampering with engines and require continuing adherence to manufacturer's recommendations.
- If practicable, lease new equipment meeting the most stringent of applicable federal[1] or state standards[2]. In general, commit to the best available emissions control technology. Tier 4 engines should be used for project construction equipment to the maximum extent feasible[3]. Lacking availability of non-road construction equipment that meets Tier 4 engine standards, commit to using the best available emissions control technologies on all equipment.

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[1] EPA's website for nonroad mobile sources is http://www.epa.gov/nonroad.

[2] For ARB emissions standards, see: http://www.arb.ca.gov/msprog/offroad/offroad.htm.

[3] Diesel engines < 25 hp rated power started phasing in Tier 4 Model Years in 2008. Larger Tier 4 diesel engines will be phased in depending on the rated power (e.g., 25 hp - <75 hp: 2013; 75 hp - < 175 hp: 2012-2013; 175 hp - < 750 hp: 2011 - 2013; and ≥ 750 hp 2011- 2015).

- Utilize EPA-registered particulate traps and other appropriate controls where suitable to reduce emissions of DPM and other pollutants at the construction site.

Administrative Controls:

- Coordinate with the Bay Area Air Quality Management District to identify a construction schedule to minimize cumulative impacts from multiple development and construction projects in the region, if feasible, to minimize cumulative impacts.
- Identify all commitments to reduce construction emissions and update the air quality analysis to reflect additional air quality improvements that would result from adopting specific air quality measures.
- Identify where implementation of mitigation measures is rejected based on economic infeasibility.
- Prepare an inventory of all equipment prior to construction and identify the suitability of add-on emission controls for each piece of equipment before groundbreaking. (Suitability of control devices is based on: whether there is reduced normal availability of the construction equipment due to increased downtime and/or power output, whether there may be significant damage caused to the construction equipment engine, or whether there may be a significant risk to nearby workers or the public.)
- Utilize cleanest available fuel engines in construction equipment and identify opportunities for electrification. Meet EPA diesel fuel requirements for off-road and on-highway, and, where appropriate, use alternative fuels such as natural gas and electric.
- Develop a construction traffic and parking management plan that minimizes traffic interference and maintains traffic flow.
- Identify sensitive receptors in the project area, such as daycare centers, schools, nursing homes, hospitals, and other health-care facilities, and specify the means by which you will minimize impacts to these populations. For example, locate construction equipment and staging zones away from sensitive receptors and fresh air intakes to buildings and air conditioners.

Green Design and Operations

LEED Certification

EPA recommends that FTA and WETA commit to facilities that are certified as "green buildings" per the Leadership in Energy and Environmental Design (LEED) green building rating system, where feasible. LEED emphasizes state-of-the-art strategies for sustainable site development, water savings, energy efficiency, materials selection, and indoor air quality. This specification will guide the building process and create a high-performance, sustainable facility. More information about the LEED green building rating system is available at http://www.usgbc.org/DisplayPage.aspx?CategoryID=19&.

Green Infrastructure

We also encourage implementation of "green infrastructure" in onsite stormwater management features, such as bioretention areas, vegetated swales, porous pavement, and filter strips. These features can serve as both stormwater treatment and visual enhancements. More detailed information on these forms of "green infrastructure" can be found at http://cfpub.epa.gov/npdes/home.cfm?program_id=298.

Industrial Materials Reuse and Recycling

For the construction of new infrastructure, EPA recommends industrial materials recycling, or the reusing or recycling of byproduct materials generated from industrial processes. Nonhazardous industrial materials, such as coal ash, foundry sand, construction and demolition materials, slags, and gypsum are valuable products of industrial processes. Industrial materials recycling preserves natural resources by decreasing the demand for virgin materials, conserves energy and reduces greenhouse gas emissions by decreasing the demand for products made from energy intensive manufacturing processes, and saves money by decreasing disposal costs for the generator and decreasing materials costs for end users. EPA recommends that for any new construction proposed the DEIS identify how industrial materials recycling can be incorporated into project design. More information can be found at: http://www.epa.gov/epawaste/conserve/rrr/imr/index.htm.

Environmental Justice

The DEIS should identify how the proposed alternatives may affect low-income or minority populations in the surrounding areas and provide appropriate mitigation measures for any anticipated adverse impacts. Executive Order 12898 addresses Environmental Justice in minority and low-income populations, and the Council on Environmental Quality has developed guidance concerning how to address Environmental Justice in the environmental review process (http://ceq.eh.doe.gov/nepa/regs/ej/justice.pdf). The environmental justice analyses for this project should include a description of the area of potential impact used for the analysis and provide the source of the demographic information. The DEIS should identify whether the proposed alternatives may disproportionately and adversely affect low-income or minority populations in the surrounding area and should provide appropriate mitigation measures for any adverse impacts. Community involvement activities for the project should include outreach to low-income or minority populations in the surrounding areas.

Climate Change

Research on global climate change indicates that many coastal areas may be impacted in the future by sea level rise. Storm surge levels are also expected to increase due to projected sea level rise. Combined with non-tropical storms, rising sea level extends the zone of impact from storm surge and waves farther inland, and will likely result in increasingly greater coastal erosion and damage.[4]

The DEIS should include a discussion of the potential impacts of climate change on the proposed project and identify adaptive management strategies to protect the project area from those impacts.

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[4] IPCC, 2007b: Summary for Policymakers. In: *Climate Change 2007: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* [Parry, M.L., O.F. Canziani, J.P. Palutikof, P.J. van der Linden and C.E. Hanson (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.

We appreciate the opportunity to provide comments on the preparation of the DEIS, and look forward to continued participation in this process as more information becomes available. When the DEIS is released for public review, please send one hard copy and one electronic copy to the address above (mail code CED-2). If you have any questions, please contact me at 415-947-3554 or mulvihill.carolyn@epa.gov.

Sincerely,

Carolyn Mulvihill

Carolyn Mulvihill
Environmental Review Office

cc: Mike Gougherty, WETA

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southwest Region
501 West Ocean Boulevard, Suite 4200
Long Beach, California 90802- 4213

April 20, 2011

In response, refer to:
SWR/F/SWR3:GS

Leslie T. Rogers
Regional Administrator
Federal Transit Administration
Region IX
201 Mission Street, Suite 1650
San Francisco, California 94105-1839

Dear Mr. Rogers:

Thank you for your letter of April 7, 2011, regarding the Federal Transit Administration's preparation of an Environmental Impact Statement/Environmental Impact Report (EIS/EIR) for the proposed Downtown San Francisco Ferry Terminal Expansion Project. NOAA's National Marine Fisheries Service (NMFS), Southwest Region accepts your request to serve as a cooperating agency pursuant to the National Environmental Policy Act (NEPA) for the preparation of this project's EIS/EIR.

The Council on Environmental Quality's (CEQ) regulations implementing NEPA defines a cooperating agency as "any Federal agency other than a lead agency which has jurisdiction by law or special expertise with respect to any environmental impact involved in a proposal (or a reasonable alternative) for legislation or other major Federal action significantly affecting the quality of the human environment". NMFS' Protected Resources Division, Southwest Region qualifies for this designation under this definition as the project in question may affect NOAA trust resources.

NMFS has jurisdiction under the Endangered Species Act of 1973 (ESA) (16 U.S.C. 1531 *et seq.*), the Magnuson Stevens Fishery Conservation and Management Act (MSA) (16 U.S.C. 1801-1882), and the Fish and Wildlife Coordination Act (16 U.S.C. 661). With this letter, we request participation in the development of the Downtown San Francisco Ferry Terminal Expansion Project's NEPA document as it relates to assessment of potential impacts and conservation measures for ESA-listed fish species under the jurisdiction of NMFS and essential fish habitat under the MSA. We wish to limit our attendance at meetings to only those where effects to essential fish habitat and listed fish will be discussed.

Please contact Gary Stern of my staff at (707) 575-6060 or Gary.Stern@noaa.gov regarding NMFS' participation as a cooperating agency.

Sincerely,

Chris E. Yates
Assistant Regional Administrator
Protected Resources Division

cc: Shelby Mendez, NMFS, Long Beach, CA

APPENDIX B

AIR QUALITY

APPENDIX B
AIR QUALITY AND GREENHOUSE GASES

This appendix describes the methodology and assumptions used to estimate emissions and health risks associated with the construction and operation of the No Action Alternative and the proposed project. Data sources are also provided.

1.0 CONSTRUCTION EMISSIONS

The No Action Alternative does not include any construction activities. Thus, the construction equipment, activity assumptions, and emission discussions below are only related to the proposed project.

1.1 CONSTRUCTION EQUIPMENT

Details of the construction equipment associated with the North Basin and South Basin activities of the proposed project are provided in Tables AIR-1 and AIR-2. Construction phases for each basin and equipment types for each activity were based on the descriptions in Chapter 2.0 *Alternatives*. Equipment quantities for each phase were not detailed in Chapter 2.0 *Alternatives*. Thus, for the purposes of the air quality/greenhouse gas (GHG) analysis, equipment quantities were assigned as follows: two of a particular equipment type if Chapter 2.0 *Alternatives* used the plural form of that equipment type (e.g., cherry pickers), and one of an equipment type if the singular equipment name (e.g., cherry picker) was provided. Equipment horsepower and duty cycles were based on the Sacramento Metropolitan Air Quality Management District's Road Construction model's (Version 6.3.2, July 2009) default horsepower and duty-cycle values for various equipment types.

The duration of each phase was generally based on the estimated construction schedule provided in Chapter 2.0 *Alternatives* (Figure 2-10). This analysis assumed that construction would begin in January 2014. However, if Chapter 2.0 *Alternatives* grouped a basin's construction activity descriptions (e.g., the South Basin's Embarcadero Plaza and East Bayside Promenade activities), then it was assumed that the construction period for these activities would extend from the beginning of the earliest activity to the end of the latest activity, with no additional time required for concurrent/overlapping activities shown on Figure 2-10. It was assumed that there would be approximately 30 construction workdays in each month, and that construction activities would occur for 8 hours each day.

The number of construction workers for each construction activity was assumed to be the maximum quantity (25 workers) provided in Chapter 2.0 *Alternatives*, except for certain activities (e.g., demolition and dredging) that were specifically referenced as requiring less workers (up to 6). Concrete truckload quantities were taken from Chapter 2.0 *Alternatives*, and assumed to occur within a 14-day period.

The California Air Resources Board's (CARB) Commercial Harbor Craft Emissions Model – California Barge and Dredge Emissions Inventory Database model's data for harbor craft were used for the marine vessel horsepower assumptions (CARB, 2011).

Table AIR-1 Proposed Project's North Basin Construction Equipment List and Construction Activity Assumptions					
Activity	**#**	**Engine Horsepower (HP)**	**Days (Assume 30 work-days/month)**	**Hours per Day**	**Duty Cycle**
Dredging (1 Month) (January 2014)					**2014**
Off-Road Equipment					
Dredging (1 month)					
Clamshell Dredge (assume crane)	1	399	30	8	43%
Boats (for dredging)					
Survey Boat (assume diesel-powered)	1	100	30	8	45%
On-Road Equipment					
Worker Vehicles	6	—	30	—	—
Gate A Pier (February–May 2014 for Structural Work); (June – November 2014 for Surface Improvements and Gate B Canopy)					**2014**
Off-Road Equipment					
Vibratory Hammer on a barge	1	75	300	8	62%
Concrete Pumpers	2	75	300	8	62%
Diesel Scissors Lifts	2	60	300	8	46%
Diesel Cherry Pickers	2	60	300	8	46%
Diesel Forklifts	2	145	300	8	30%
Diesel Generators	2	549	300	8	74%
Welders	2	45	300	8	45%
Boats					
Gasoline Utility Boats	2	100	300	8	45%
Diesel Tugboat	1	400	300	8	45%

Table AIR-1
Proposed Project's North Basin Construction Equipment List and Construction Activity Assumptions (Continued)

Activity	#	Engine Horsepower (HP)	Days (Assume 30 work-days/month)	Hours per Day	Duty Cycle
On-Road Equipment/Vehicles					
Worker Vehicles	25	—	300	—	—
Concrete Trucks (one-way truckloads; not trips)	62	—	14	—	—
Marginal Wharf Improvements (4 Months) (February –May 2014)					**2014**
Off-Road Equipment					
Concrete Pumpers	2	75	120	8	62%
Boats					
Diesel Tugboat	1	400	120	8	45%
On-Road Equipment/Vehicles					
Worker Vehicles	25	—	120	—	—
Concrete Trucks (one-way truckloads; not trips)	15	—	14	—	—
Gate A Berth (3 Months) (November 2014-January 2015)					**2014-2015**
Vibratory Hammer on a Barge	1	75	90	8	62%
Boats					
Diesel Tugboat	1	400	90	8	45%
Gasoline Utility Boats	2	100	90	8	45%
On-Road Equipment/Vehicles					
Worker Vehicles	25	—	90	—	—
Testing and Closeout (2 Months) (January–February 2015)					**2015**
On-Road Equipment/Vehicles					
Worker Vehicles	6	—	60	—	—

Table AIR-2
Proposed Project's South Basin Construction Equipment List and Construction Activity Assumptions

Activity	#	Engine Horsepower (HP)	Days (Assume 30 work-days/month)	Hours of Activity per Day	Duty Cycle
Demolition and Dredging (4 months) (January 2014–April 2014)				**2014**	
Off-Road Equipment					
Demolition (2 months)					
Crane w/Clamshell Bucket	1	399	60	8	43%
Excavator with Jaws	1	168	60	8	57%
Dredging (2 months)					
Clamshell Dredge (assume crane)	1	399	60	8	43%
Boats (for dredging)					
Survey Boat (assume diesel powered; HP assumption from Tim Rimpo)	1	100	60	8	45%
On-Road Equipment					
Worker Vehicles	6	—	120	—	—
Embarcadero Plaza, East Bayside Promenade, South Apron (Total 18 months) (May 2014–October 2015)				**2014-2015**	
Off-Road Equipment					
Vibratory Hammer On A Barge	1	75	540	8	62%
Concrete Pumpers	2	75	540	8	62%
Diesel Scissors Lifts	2	60	540	8	46%
Diesel Cherry Pickers	2	60	540	8	46%
Diesel Forklifts	2	145	540	8	30%
Diesel Generators	2	549	540	8	74%
Welders	2	45	540	8	45%
Boats					
Gasoline Utility Boats	2	100	540	8	45%
Diesel Tugboat	1	400	540	8	45%

Table AIR-2
Proposed Project's South Basin Construction Equipment List and Construction Activity Assumptions (Continued)

Activity	#	Engine Horsepower (HP)	Days (Assume 30 work-days/month)	Hours of Activity per Day	Duty Cycle
On-Road Equipment/Vehicles					
Worker Vehicles	25	—	540	—	—
Concrete Trucks (one-way truckloads; not trips)	200	—	14	—	—
Lowboy Truck for granite delivery (one-way truckload not truck trips)	1	—	1	—	—
Gate F Berth (2 Months) (May–June 2015)				**2015**	
Vibratory Hammer on a Barge	1	75	60	8	62%
Boats					
Diesel Tugboat	1	400	60	8	45%
Gasoline Utility Boats	2	100	60	8	45%
On-Road Equipment/Vehicles					
Worker Vehicles	25	—	60	—	—
Gate G Berth (3 Months) (September– November 2015)				**2015**	
Vibratory Hammer on a Barge	1	75	90	8	62%
Boats					
Diesel Tugboat	1	400	90	8	45%
Gasoline Utility Boats	2	100	90	8	45%
On-Road Equipment/Vehicles					
Worker Vehicles	25	—	90	—	—
Testing and Closeout (2 Months) (November–December 2015)				**2015**	
On-Road Equipment/Vehicles					
Worker Vehicles	6	—	60	—	—

1.2 CONSTRUCTION EMISSION SUMMARY

Construction emission sources were grouped into three categories: on-road vehicles, off-road equipment, and marine vessels. Tables AIR-3 and AIR-4 provide summaries of construction-related emissions in tons per year (tons/year) and pounds per day (lbs/day), and the corresponding Bay Area Air Quality Management District (BAAQMD) thresholds. Construction emissions of toxic air contaminants (TACs) and particulate matter 2.5 microns in diameter or less ($PM_{2.5}$) are described in Section 3.1.

1.2.1 On-Road Emissions

The on-road emissions included emissions from construction-worker vehicles, concrete trucks, and lowboy trucks (Tables AIR-5 through AIR-7). It was assumed that approximately half of the construction-worker vehicles were light-duty automobiles, and half were light-duty trucks. An average vehicle miles traveled of 10.8 miles was assumed based on URBEMIS' default values for San Francisco County (Jones & Stokes Associates, 2007). EMFAC 2007 v.3's emission factors (at an assumed speed of 25 miles per hour) were used to calculate the exhaust emissions of each criteria pollutant during each year of construction (CARB, 2006a). The number of construction truckloads for a particular phase was divided by the number of days that truck was used (e.g., 14 days for concrete trucks) as shown in Tables AIR-1 and AIR-2. The number of vehicles was multiplied by two to account for daily round-trips. The equations below were used to calculate the on-road construction worker and truck emissions.

> Construction Worker Vehicle Daily Emissions (lbs/day): # of construction workers * 2 trips/day * average vehicle miles traveled (10.8 miles) * [(Emission Factor for Light-Duty Automobiles (grams/mile) + Emission Factor for Light-Duty Trucks (grams/mile)/2] / conversion factor (454 grams/lbs)
>
> Concrete or Lowboy Trucks: # of construction truckloads for a particular phase/day * 2 trips/day * average vehicle miles traveled (10.8 miles) * (Emission Factor for Light-Duty Trucks (grams/mile) / conversion factor (454 grams/lbs)

1.2.2 Off-Road Emissions

The CARB's OFFROAD2007 emission factors (CARB, 2006b) were used to calculate the emissions generated from the project's construction equipment during each construction phase (Table AIR-8).[1] Fugitive-dust–related particulate matter emissions were assumed to be negligible because the proposed project's construction area overlies water. The model's default horsepower and load factors for each equipment type were used, and it was assumed that active construction would occur for 8 hours each day. Based on the construction equipment detail tables (Tables AIR-1 and AIR-2), equipment types and quantities were input into the model for each construction phase for each year of construction. If a particular type of construction equipment was not included in the model's list of equipment types, a similar equipment type was selected, or the "other construction equipment" category was used.

[1] OFFROAD2007 was used because the newer OFFROAD2011 does not yet allow the user to estimate emissions for ROG or CO_2.

Table AIR-3 Annual Construction-Related Emissions for the Proposed Project					
	Emissions (tons/year)				
Emission Category	**ROG**	**NO_X**	**PM_{10}**	**$PM_{2.5}$**	**CO_2e**
2014 Calculations					
On-Road Emissions	0.03	0.15	0.003	0.003	188
Off-Road Emissions	1.58	15.37	0.65	0.65	2,235
Marine Emissions	0.28	7.14	0.23	0.23	940
Total 2014:	**1.90**	**22.66**	**0.88**	**0.88**	**3,364**
2015 Calculations					
On-Road Emissions	0.021	0.069	0.001	0.001	143
Off-Road Emissions	0.78	7.51	0.31	0.31	1,203
Marine Emissions	0.20	5.00	0.17	0.17	649
Total 2015:	**1.00**	**12.58**	**0.48**	**0.48**	**1,996**

Notes:

CO_2e = carbon dioxide equivalent
NO_X = nitrogen oxide
PM_{10} = particulate matter 10 microns in diameter or less
$PM_{2.5}$= particulate matter 2.5 microns in diameter or less
ROG = reactive organic gas

Table AIR-4
Average Daily Construction-Related Emissions for the Proposed Project

Mitigation Level	Emissions (lbs/day)				
	ROG	**NO_X**	**PM_{10}**	**$PM_{2.5}$**	**CO_2e**
Estimated Unmitigated Average Total Emissions	8.1	98	3.8	3.8	14,888
Estimated Emissions after implementation of Mitigation Measure AQ-1: Construction Phasing (mitigated)	5.1	62	2.4	2.4	9,403
Estimated emissions after implementation of Mitigation Measure AQ-1 and Mitigation Measure AQ-2: Best Management Practices (mitigated)	5.1	50	1.3	1.3	9,403
BAAQMD Threshold	**54**	**54**	**82**	**54**	**N/A**
Exceeds Threshold:	**N**	**N**	**N**	**N**	**N/A**

Notes:

BAAQMD = Bay Area Air Quality Management District
CO_2e = carbon dioxide equivalent
lbs/day
NO_X = nitrogen oxide
PM_{10} = particulate matter 10 microns in diameter or less
$PM_{2.5}$= particulate matter 2.5 microns in diameter or less
ROG = reactive organic gas

* Unmitigated average total construction-related emissions from the proposed project were calculated by dividing the total combined North Basin and South Basin 2014 and 2015 emissions (tons/year) by a 24-month, 30-day/month construction period and applying a conversion factor to obtain average daily emissions in lbs/day. These unmitigated total emissions were assumed to: 1) occur during an overlapping 24-month construction period; and 2) be emitted daily from 8 hours of active construction activities.

Mitigated emissions shown above indicate the emissions reduction from implementation of Mitigation Measure AQ-1, and an additional reduction from implementation of Mitigation Measure AQ-2. Mitigation measures are detailed below.

The BAAQMD thresholds are from the BAAQMD's CEQA Air Quality Guidelines (BAAQMD, 2011).

Table AIR-5 North Basin Daily On-Road Vehicle Exhaust Emissions					
	Emissions (lbs/day)				
North Basin	**ROG**	**NO_X**	**PM_{10}**	**$PM_{2.5}$**	**CO_2e**
2014 Calculations					
Dredging					
Passenger Vehicles	0.020	0.060	0.001	0.001	114
Gate A Pier and Gate B Canopy					
Passenger Vehicles	0.082	0.252	0.004	0.004	477
Concrete Trucks	0.058	1.686	0.032	0.032	252
Total for Gate A	**0.140**	**1.938**	**0.037**	**0.037**	**729**
Marginal Wharf Improvements					
Passenger Vehicles	0.082	0.252	0.004	0.004	477
Concrete Trucks	0.014	0.408	0.008	0.008	61
Total for Wharf	**0.096**	**0.660**	**0.012**	**0.012**	**538**
2015 Calculations					
Gate A Berth					
Passenger Vehicles	0.070	0.229	0.004	0.004	477
Testing and Closeout					
Passenger Vehicles	0.070	0.229	0.004	0.004	477

Notes:

CO_2e = carbon dioxide equivalent
lbs/day = pounds per day
NO_X = nitrogen oxide
PM_{10} = particulate matter 10 microns in diameter or less
$PM_{2.5}$= particulate matter 2.5 microns in diameter or less
ROG = reactive organic gas

Table AIR-6 South Basin Daily On-Road Vehicle Exhaust Emissions					
	Emissions (lbs/day)				
South Basin	**ROG**	**NO_X**	**PM_{10}**	**$PM_{2.5}$**	**CO_2e**
2014 Calculations					
Demolition and Dredging					
Passenger Vehicles	0.020	0.060	0.001	0.001	114
Embarcadero Plaza, East Bayside Promenade, South Apron					
Passenger Vehicles	0.082	0.25	0.0042	0.0042	477
Concrete Trucks	0.2	5.4	0.10	0.10	814
Lowboy Truck	0.013	0.38	0.0073	0.0073	57
Total for EP, EBP, SA	**0.28**	**6.1**	**0.12**	**0.12**	**1,348**
2015 Calculations					
Embarcadero Plaza, East Bayside Promenade, South Apron					
Passenger Vehicles	0.070	0.23	0.004	0.004	477
No Concrete Trucks in 2015					
No Lowboys in 2015					
Total for EP, EBP, SA	**0.070**	**0.23**	**0.004**	**0.004**	**477**
Gate F Berth					
Passenger Vehicles	0.07	0.23	0.004	0.004	477
Gate G Berth					
Passenger Vehicles	0.07	0.23	0.004	0.004	477
Testing and Closeout					
Passenger Vehicles	0.07	0.23	0.004	0.004	477

Notes:

CO_2e = carbon dioxide equivalent
lbs/day = pounds per day
NO_X = nitrogen oxide
PM_{10} = particulate matter 10 microns in diameter or less
$PM_{2.5}$= particulate matter 2.5 microns in diameter or less
ROG = reactive organic gas
EB = Embarcadero Plaza
EBP = East Bayside Promenade
SA = South Apron

Table AIR-7
Proposed Project's Annual On-Road Vehicle Exhaust Emissions

Combined Years and Basin Tasks	Emissions (tons/year)				
	ROG	**NO_X**	**PM_{10}**	**$PM_{2.5}$**	**CO_2e**
2014 Calculations					
NB Dredging	0.00030	0.00091	0.000015	0.000015	1.7
SB Demo and Dredging	0.0012	0.0036	0.000061	0.000061	6.9
NB Gate A Pier and B Canopy	0.013	0.050	0.00086	0.00086	73
NB Marginal Wharf	0.0050	0.018	0.00031	0.00031	29
NB Gate A Berth	0.0021	0.007	0.00012	0.00012	14
SB Circulation Improvements	0.011	0.069	0.0012	0.0012	63
Total 2014:	**0.032**	**0.15**	**0.0026**	**0.0026**	**188**
2015 Calculations					
NB Gate A Berth	0.0011	0.0034	0.000059	0.000059	7.2
NB Testing and Closeout	0.0021	0.0069	0.00012	0.00012	14.3
SB Circulation Improvements	0.011	0.034	0.00059	0.00059	71.6
SB Gate F Berth	0.0021	0.0069	0.00012	0.00012	14.3
SB Gate G Berth	0.0032	0.010	0.00018	0.00018	21.5
SB Testing and Closeout	0.0021	0.0069	0.00012	0.00012	14.3
Total 2015:	**0.021**	**0.069**	**0.0012**	**0.0012**	**143**

Notes:

CO_2e = carbon dioxide equivalent
NB = northbound
NO_X = nitrogen oxide
PM_{10} = particulate matter 10 microns in diameter or less
$PM_{2.5}$= particulate matter 2.5 microns in diameter or less
ROG = reactive organic gas
SB = southbound

Table AIR-8
Annual Emissions from Off-Road Construction Equipment for the Proposed Project

Combined Years and Basin Tasks	Emissions (tons/year)				
	ROG	**NO_X**	**PM_{10}**	**$PM_{2.5}$**	**CO_2e**
2014 Calculations					
NB Dredging	0.010	0.084	0.003	0.003	12
SB Demo and Dredging	0.053	0.442	0.018	0.018	61
NB Gate A Berth	0.010	0.070	0.005	0.005	9
NB Gate A Pier and B Canopy	0.817	8.029	0.333	0.333	1,178
NB Marginal Wharf	0.035	0.257	0.019	0.019	35
SB Circulation Improvements	0.659	6.486	0.269	0.269	942
Total 2014:	**1.58**	**15.37**	**0.65**	**0.65**	**2,235**
2015 Calculations					
NB Gate A Berth	0.004	0.032	0.002	0.002	4
SB Circulation Improvements	0.75	7.32	0.30	0.30	1,178
SB Gate F Berth	0.009	0.064	0.005	0.005	9
SB Gate G Berth	0.012	0.088	0.006	0.006	13
Total 2015:	**0.78**	**7.51**	**0.31**	**0.31**	**1,203**

Notes:

CO_2e = carbon dioxide equivalent
NB = northbound
NO_X = nitrogen oxide
PM_{10} = particulate matter 10 microns in diameter or less
$PM_{2.5}$= particulate matter 2.5 microns in diameter or less
ROG = reactive organic gas
SB = southbound

The model provided daily pollutant emissions (lbs/day) for each construction phase. As shown in the equation below, these daily emissions were multiplied by the number of construction days for a particular phase, and divided by a conversion factor (2,000 lbs/ton) to calculate annual emissions for each construction phase (tons/year).

> Annual Emissions by Construction Phase = Daily Emissions from Off-Road Model Results (lbs/day) * # of construction days for that phase in a given year / conversion factor (2,000 lbs/ton)

1.2.3 Marine Emissions

Daily emission rates (in lbs/day) were calculated for construction-related marine vessels using the formula below (Table AIR-9). It was assumed that the project's marine vessels would be 2008 models. The CARB's Commercial Harbor Craft Emissions Model – California Barge and Dredge Emissions Inventory Database 2011 model was used to determine appropriate marine vessel emission factors (Table AIR-10). The appropriate emission factor for each vessel was selected from the corresponding horsepower range for model year 2008. The deterioration rates used in the equations below were selected based on each vessel's horsepower range, and were adjusted to consider the age of the vessel at the time of use /total lifespan of the vessel (vessel lifespan assumed to equal 20 years). Fuel correction factors were 0.948 and 0.8 (unit less) for oxides of nitrogen (NO_X) and particulate matter (PM), respectively, and were taken from CARB's Appendix B of the Commercial Harbor Craft Emissions Model, *Emissions Estimation Methodology for Commercial Harbor Craft Operating in California* (CARB, 2012).

> Daily emission rate (lbs/day) = emission factor (grams/horsepower-hour) * marine vessel's horsepower * vessel load factor × conversion factor (1 lb/453.6 grams) * vessel operation period (hours/day) * fuel correction factor (for NO_X and PM only) * (1 + (deterioration rate * adjustment of deterioration rate for consideration of age of vessel))

Annual emissions (tons/year) associated with each construction phase were determined by multiplying the daily emission rate (lbs/day) for the applicable marine vessel(s) by the number of work days for that construction phase in a given year by the number of vessels of that type, and dividing by a conversion factor of 2,000 lbs/ton (Table AIR-11).

1.2.4 Mitigated Emissions Calculations

As shown in Table AIR-4, the proposed project's construction-related unmitigated emissions would exceed the applicable BAAQMD average daily emission threshold for NO_X. Therefore, the proposed project would include the mitigation measures identified below, and would result in the construction-related emissions following mitigation shown in Table AIR-4. Mitigation measures for the proposed project's construction activities include:

- **Mitigation Measure AQ-1: Construction Phasing**. The Water Emergency Transportation Authority will phase construction activities in such a way that onsite emission-generating construction activities for the North Basin and South Basin improvements do not overlap.

- **Mitigation Measure AQ-2: Implement BAAQMD-Recommended Best Management Practices**. The following BAAQMD-recommended best management practices will be implemented to reduce exhaust emissions:

Table AIR-9
Daily Emission Summary for Marine Vessels (Model Year 2008) Used for Construction of the Proposed Project

Equipment Type by Construction Year	Horsepower (HP)	Emissions (lbs/day)					
		ROG	CO	NO_X	PM_{10}	$PM_{2.5}$	CO_2e
2014							
Survey Boat	100	0.198	2.57	3.93	0.17	0.17	451.03
Diesel Tugboat	400	0.435	3.14	12.80	0.34	0.34	1804.13
Gasoline Utility Boat	100	0.198	2.57	3.93	0.17	0.17	451.03
2015							
Survey Boat	100	0.200	2.59	3.95	0.18	0.18	451.03
Diesel Tugboat	400	0.443	3.18	12.92	0.34	0.34	1804.13
Gasoline Utility Boat	100	0.200	2.59	3.95	0.18	0.18	451.03

Notes:
CO = carbon dioxide
CO_2e = carbon dioxide equivalent
lbs/day = pounds per day
NO_X = nitrogen oxide
PM_{10} = particulate matter 10 microns in diameter or less
$PM_{2.5}$= particulate matter 2.5 microns in diameter or less
ROG = reactive organic gas

Table AIR-10
Emission Factors and Deterioration Rates Used in Proposed Project's Construction-Related Marine Vessel Emissions

Equipment Horsepower Range	Max Horsepower	Vessel Model Year	Emission Factors (grams/horsepower-hour)			
			ROG	CO	NO_X	PM
50 to <=120	120	2008	0.23	3.09	5.01	0.24
250 to <=500	500	2008	0.12	0.92	4.0	0.11
Deterioration Rates (percent/100)						
Equipment Horsepower Range	**ROG**	**CO**	**NO_X**	**PM**	N/A	
51 to 120	0.28	0.16	0.14	0.44		
251-500	0.44	0.25	0.21	0.67		

Notes:

CO = carbon dioxide
CO_2e = carbon dioxide equivalent
N/A = not applicable
NO_X = nitrogen oxide
PM= particulate matter
ROG = reactive organic gas

Emission factors are from the California Air Resources Board's Barge and Dredge Emissions 2011 model and are based on main engine emission rates.
Deterioration rates are also based on California Air Resources Board's Appendix B Emissions Estimation Methodology for Commercial Harbor Craft Operating in California. These rates are the assumed deterioration rates for engines at the end of their useful life. For example, the ROG emissions from a 100-horsepower engine are assumed to be 28 percent higher after 20 years (the engine's useful life), as compared to the engine's new emission rate.

Table AIR-11 Annual Marine Vessel Emissions for the Proposed Project's Construction Phases					
Combined Years and Basin Tasks	**Emissions (tons/year)**				
	ROG	**NO_X**	**PM_{10}**	**$PM_{2.5}$**	**CO_2e**
2014 Calculations					
NB Dredging	0.00	0.06	0.003	0.003	6.77
NB Gate A Berth	0.02	0.62	0.02	0.02	81.19
SB Demo and Dredging	0.01	0.12	0.01	0.01	13.53
NB Gate A Pier and B Canopy	0.12	3.10	0.10	0.10	405.93
NB Marginal Wharf	0.03	0.77	0.02	0.02	108.25
SB Circulation Improvements	0.10	2.48	0.08	0.08	324.74
Total 2014:	**0.28**	**7.14**	**0.23**	**0.23**	**940.40**
2015 Calculations					
NB Gate A Berth	0.01	0.31	0.01	0.01	40.59
SB Circulation Improvements	0.13	3.12	0.10	0.10	405.93
SB Gate F Berth	0.03	0.62	0.02	0.02	81.19
SB Gate G Berth	0.04	0.94	0.03	0.03	121.78
Total 2015:	**0.20**	**5.00**	**0.17**	**0.17**	**649.49**

Notes:

CO_2e = carbon dioxide equivalent
NB = northbound
NO_X = nitrogen oxide
PM= particulate matter
ROG = reactive organic gas
SB = southbound

- Minimize the idling time of diesel-powered construction equipment to 2 minutes.

- The contractor will demonstrate at various phases of construction (e.g., 25 percent, 50 percent, and completion) that the off-road equipment (more than 50 horsepower) and marine vessels to be used during construction (i.e., owned, leased, and subcontractor vehicles) would achieve a project-wide fleet-average 20 percent NO_X reduction, and a 45 percent PM reduction, compared to the most recent CARB fleet average to the extent feasible. Acceptable options for reducing emissions include the use of late-model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, add-on devices such as particulate filters, and/or other options that may become available. The contractor will document efforts taken to achieve the specified goals, explain why meeting the goals was not feasible (if applicable), and indicate what emissions reduction and equipment use goals were achieved.

- Require that all construction equipment, diesel trucks, and generators be equipped with Best Available Control Technology for emission reductions of NO_X and PM.

- Require all contractors use equipment that meets CARB's most recent certification standard for off-road heavy-duty diesel engines.

Table AIR-4 above shows mitigated emissions associated with Mitigation Measures AQ-1 and AQ-2. Whereas unmitigated emissions assume that the North Basin and South Basin construction activities would overlap, Mitigation Measure AQ-1 assumes no overlap of emission-generating activities. Without any overlap of emission-generating construction activities, the total construction period would increase from 24 to 38 months. With implementation of Mitigation Measure AQ-1, average daily NO_X emissions would be reduced from 99.8 to 63.0 pounds per day, which still exceeds the BAAQMD's 54-pounds-per-day significance threshold.

Mitigation Measure AQ-2 would further reduce emissions from 63.0 pounds of NO_X per day to 50.7 pounds per day (see Table AIR-4). With implementation of Mitigation Measures AQ-1 and AQ-2, the project's emissions would be less than BAAQMD's 54-pounds-per-day threshold.

2.0 OPERATION EMISSIONS

The No Action Alternative and the proposed project would result in direct and indirect operational-related emissions. For the No Action Alternative, vessel idling would generate exhaust emissions. The proposed project would generate exhaust emissions from several sources, including idling vessels, operation and periodic testing of an emergency generator, and a survey boat used for maintenance dredging. Maintenance dredging and the operation of an emergency generator would occur infrequently, but were included in the emission calculations to determine the most conservative (i.e., highest emissions) scenario. For both the No Action Alternative and the proposed project, vessels were assumed to be evenly composed of large (7,657 horsepower) and small (2,198 horsepower) vessels. Vessel types assumed in this analysis were based on vessel information provided in the Program Environmental Impact Report's Technical Appendix AIR-C Emissions for Alternatives 1 through 4's *Summary of Marine Emissions for the No Project and "Reduced" Alternative 2 Project Scenarios Assuming EPA Tier 2 Emissions Standards for Diesel Engines* table (WETA, 2003).

2.1 NO ACTION OPERATION EMISSIONS

Similar to the construction-related marine vessel calculations, maximum daily emission rates (lbs/day) were calculated for the No Action Alternative's large and small vessels (Table AIR-12). The vessels were assumed to be 2010 models, with the horsepower described above. The marine vessels for the No Action and proposed project's services would use U.S. Environmental Protection Agency (U.S. EPA) and CARB Tier 2–compliant clean diesel engines, which emit approximately 25 to 30 percent less reactive organic gas (ROG), NO_X, and particulate matter 10 microns in diameter or less (PM_{10}) than current diesel engines. In addition, add-on control devices such as selective catalytic reduction and particulate traps would further reduce NO_X and PM_{10} emissions to 10 percent and 5 percent, respectively, of U.S. EPA Tier 2 levels. For ROG, NO_X, PM_{10}, and $PM_{2.5}$, the U.S. EPA's Marine Compression-Ignition Engines Exhaust Emission Standards for Tier 2 commercial (C1) engines were used (Table AIR-13). As described above, additional emission reductions from the add-on control devices were applied for NO_X and PM_{10} (Table AIR-13).

Table AIR-12
Operation Emissions for the No Action Alternative – Maximum Daily Emission Rates

Equipment Type	Equipment Horsepower	Emissions (lbs/day)					
		ROG	CO	NO_X	PM_{10}	$PM_{2.5}$	CO_2e
Large Vessel	7,657	4.9	6.8	0.5	0.014	0.014	1,039
Small Vessel	2,198	1.4	2.0	0.1	0.004	0.004	298

Notes:
Maximum Daily Emission Rates are the emissions that would be generated during an assumed 24 hours of operation.
CO = carbon dioxide
CO_2e = carbon dioxide equivalent
lbs/day = pounds per day
NO_X = nitrogen oxide
PM_{10} = particulate matter 10 microns in diameter or less
$PM_{2.5}$= particulate matter 2.5 microns in diameter or less
ROG = reactive organic gas

Table AIR-13
Marine Vessel Emission Rates for the No Action and Proposed Project's Operation Phases

Criteria Pollutants	Tier 2 Emission Rate (grams/kw-hr)	Reduction by Add-on Control Devices (percent)	Adjusted Emission Rate (grams/kw-hr)
PM_{10} and $PM_{2.5}$	0.2	95	0.01
CO	5	0	5
ROG	3.6	0	3.6
NO_X	3.6	90	0.36

Notes:
Tier 2 emission rates for ROG and NO_X are a combined 7.2 grams/kw-hr. These rates were split evenly between ROG and NO_X for the purposes of these calculations. Because the Tier 2 standards do not include an emission rate for CO_2, CO_2 emission rates were estimated using California Air Resources Board rates.
Source: U.S. EPA 2012a
CO = carbon monoxide
CO_2 = carbon dioxide
grams/kw-hr. = grams per kilowatt-hour
NO_X = nitrogen oxide
PM = particulate matter
ROG = reactive organic gas

The CARB's Commercial Harbor Craft Emissions Model – California Barge and Dredge Emissions Inventory Database 2011 model was used to determine appropriate marine vessel emission factors for carbon dioxide equivalent (CO_2e) emissions for both alternatives. The appropriate emission factor for each vessel was selected from the corresponding horsepower range for the corresponding model year. The vessels were assumed to be 2010 models, with the horsepower described above. Based on Chapter 2.0 *Alternatives*, under the No Action Alternative, vessel arrivals could increase to a total of 65 vessels/day.

The equation used to estimate vessel idling emissions is as follows:

> **Daily emission rate (lbs/day) for idling small or large vessels** = emission factor (grams/horsepower-hour) * marine vessel's horsepower * vessel load factor (of 0.01) * conversion factor (1 lb/453.6 grams) * number of total vessels/day * 1/2 the vessels (one-half of total vessels are small vessels and one-half are large) * 20 idling minutes/vessel * 1 hour/60 min

Annual vessel idling exhaust emissions (tons/year) were calculated as shown in Table AIR-14. To calculate vessel idling emissions, daily emission rates for each vessel type was multiplied by 365 days/year and multiplied by a conversion factor (1 ton/2,000 lbs). Average daily emissions for the No Action Alternative (Table AIR-15) were calculated by dividing the total annual emissions (tons/year) for each pollutant by 365 days/year and multiplying by a conversion factor (1 ton/2,000 lbs).

Table AIR-14
Annual Operation-Related Emissions for the No Action Alternative

Operation Activity	Emissions (tons/year)				
	ROG	**NO_X**	**PM_{10}**	**$PM_{2.5}$**	**CO_2e[1]**
Large Vessel Idling	0.90	0.09	0.0025	0.0025	190
Small Vessel Idling	0.26	0.03	0.0007	0.0007	54
Total:	**1.15**	**0.12**	**0.0032**	**0.0032**	**244**
BAAQMD Annual Emission Thresholds	10	10	15	10	1,212.54

Notes:

Net difference values may slightly vary due to rounding.

[1] BAAQMD's maximum annual emissions threshold for CO_2e can also be expressed as 1,100 metric tons per year (2,204.62 pounds per metric ton).

BAAQMD = Bay Area Air Quality Management District
CO_2e = carbon dioxide equivalent
N/A = not applicable
NO_X = nitrogen oxide
PM_{10} = particulate matter 10 microns in diameter or less
$PM_{2.5}$= particulate matter 2.5 microns in diameter or less
ROG = reactive organic gas

Table AIR-15 Average Daily Operation-Related Emissions for the No Action Alternative					
	Emissions (lbs/day)				
	ROG	NO_X	PM_{10}	$PM_{2.5}$	CO_2e
Total	6.32	0.63	0.018	0.018	1,338
BAAQMD Threshold	54	54	82	54	N/A
Exceeds Threshold	No	No	No	No	N/A

Notes:

Emissions are averaged from the total annual emissions (tons/year) for this alternative.

BAAQMD = Bay Area Air Quality Management District
CO_2e = carbon dioxide equivalent
N/A = not applicable
NO_X = nitrogen oxide
PM_{10} = particulate matter 10 microns in diameter or less
$PM_{2.5}$= particulate matter 2.5 microns in diameter or less
ROG = reactive organic gas

2.2 PROPOSED PROJECT OPERATION EMISSIONS

Similar to the construction-related marine vessel calculations and the No Action Alternative's operation emission calculations, maximum daily emission rates (lbs/day) were calculated for the proposed project's maintenance dredging activities (survey boat), and large and small vessels (Table AIR-16). Based on Chapter 2.0 *Alternatives*, the proposed project would support and increase in vessel arrivals to a total of 181 vessels arrivals/day. CARB's Commercial Harbor Craft Emissions Model – California Barge and Dredge Emissions Inventory Database 2011 model was used to determine appropriate marine vessel emission factors for CO_2e. For ROG, NO_X, PM_{10}, and $PM_{2.5}$, the U.S. EPA's Marine Compression-Ignition Engines Exhaust Emission Standards for Tier 2 commercial (C1) engines were used (Table AIR-13).

Table AIR-16 Operation Emissions for the Proposed Project – Maximum Daily Emission Rates							
Equipment Type	Equipment Horsepower	Emissions (lbs/day)					
		ROG	CO	NO_X	PM_{10}	$PM_{2.5}$	CO_2e
Survey Boat (Maintenance Dredging)	100	0.2	2.6	4.0	0.2	0.2	451
Emergency Generator	549	4.0	16.9	47.2	1.4	1.3	9,043
Large Vessel	7,657	13.7	19.0	1.4	0.04	0.04	2,894
Small Vessel	2,198	3.9	5.5	0.4	0.01	0.01	831

Notes:

Maximum Daily Emission Rates are the emissions that would be generated during an assumed 24 hours of operation.

CO = carbon dioxide
CO_2e = carbon dioxide equivalent
lbs/day = pounds per day
NO_X = nitrogen oxide
PM_{10} = particulate matter 10 microns in diameter or less
$PM_{2.5}$= particulate matter 2.5 microns in diameter or less
ROG = reactive organic gas

The deterioration rates used in the equation below were selected based on each vessel's horsepower and were adjusted for the age of the vessel at the time of use /total lifespan of the vessel (assumed 20 years). It was assumed the first year that maintenance dredging occurring under the proposed project would be 3 years after completion of project construction (assumed to be year 2018), and that the survey boat would be 10 years old out of its 20-year lifespan (a deterioration rate adjustment of 10/20).

Daily emission rate (lbs/day) for survey boat = emission factor (grams/horsepower-hour) * marine vessel's horsepower * vessel load factor * conversion factor (1 lb/453.6 grams) * vessel operation period (hours/day) * fuel correction factor (for NO_X and PM only) * (1 + (deterioration rate × adjustment of deterioration rate for consideration of age of boat))

Daily emission rate (lbs/day) for idling small or large vessels = emission factor (grams/horsepower-hour) * marine vessel's horsepower * vessel load factor (of 0.01) * conversion factor (1 lb/453.6 grams) * number of total vessels/day * 1/2 the vessels * 20 idling minutes/vessel * 1 hour/60 min

Annual emissions (tons/year) from each activity were calculated as shown in Table AIR-17. To calculate the vessel idling emissions, the daily emission rates for each vessel type were multiplied by 365 days/year, and multiplied by a conversion factor (1 ton/2,000 lbs).

Table AIR-17
Annual Operation-Related Emissions for the Proposed Project

Combined Operational Activities	Emissions (tons/year)				
	ROG	**NO_X**	**PM_{10}**	**$PM_{2.5}$**	**CO_2e**
Operational Emissions Calculations					
Large Vessel Idling	2.5	0.25	0.007	0.007	528
Small Vessel Idling	0.72	0.072	0.0020	0.0020	152
Emergency Generator	0.01	0.12	0.003	0.003	23
Maintenance Dredging	0.0010	0.020	0.0009	0.0009	2
Total:	**3.22**	**0.46**	**0.01**	**0.01**	**705**

Notes:

CO_2e = carbon dioxide equivalent
NO_X = nitrogen oxide
PM_{10} = particulate matter 10 microns in diameter or less
$PM_{2.5}$= particulate matter 2.5 microns in diameter or less
ROG = reactive organic gas

Maintenance dredging emissions were assumed to occur over a 10-day period; thus, the equation used to calculate maintenance dredging emissions was daily emission rate for the survey boat * 10 days/year * a conversion factor (1 ton/2,000 lbs). Average daily emissions for the proposed project (Table AIR-18) were calculated by dividing the total annual emissions (tons/year) for each pollutant by 365 days/year, and multiplying by a conversion factor (1 ton/2,000 lbs).

Table AIR-18 Average Daily Operation-Related Emissions for the Proposed Project					
	Emissions (lbs/day)				
	ROG	**NO_X**	**PM_{10}**	**$PM_{2.5}$**	**CO_2e**
Total Average Emissions	17.7	2.5	0.073	0.071	3,865
BAAQMD Threshold	54	54	82	54	N/A

Notes:

BAAQMD = Bay Area Air Quality Management District
CO_2e = carbon dioxide equivalent
GHG = greenhouse gas
lbs/day = pounds per day
NO_X = nitrogen oxide
PM_{10} = particulate matter 10 microns in diameter or less
$PM_{2.5}$= particulate matter 2.5 microns in diameter or less
ROG = reactive organic gas

Daily emissions from the operation and periodic testing of an emergency generator under the proposed project were calculated using the Sacramento Metropolitan Air Quality Management District's Road Construction Emissions Model, Version 6.3.2. In the model, it was assumed that one 549-horsepower generator (default generator size and load factor used) would operate 24 hours per day. As shown in the following equation, annual emissions (Table AIR-17) were calculated by using these maximum daily emission rates (Table AIR-16), and assuming that the generator would be operated up to a maximum of 124 hours annually (2 hours/month for periodic testing, and up to 100 hours of use):

Annual emissions (tons/year) from the emergency generator = daily emission rates (lbs/day) × 1 day/24 hours × 124 hours/year × conversion factor (1 ton/2,000 lbs)

2.3 NET OPERATION EMISSIONS

As shown in Tables AIR-19 and AIR–20, net proposed project emissions were calculated by determining the total increase in the proposed project's emissions, compared to the No Action Alternative's emissions. For operational emissions, there are four emission categories for the proposed project: large-vessel idling, small-vessel idling, emergency generator, and maintenance dredging. However, for the No Action Alternative, there are only two emission categories: large-vessel idling and small-vessel idling. Consequently, the net emission increases for the emergency generator and maintenance dredging shown in Table AIR-19 are identical to the proposed project emissions for these categories shown in Table AIR-17. The net emission increases for the large- and small-vessel idling categories shown in Table AIR-19 are the net change in emissions from these categories shown for the proposed project in Table AIR-17, minus the emissions shown for the No Action Alternative shown in Table AIR-14.

Table AIR-19
Net Increase in Annual Operational Emissions from the Proposed Project as Compared to the No-Action Alternative

Combined Operational Activities	Emissions (tons/year)				
	ROG	NO_X	PM_{10}	$PM_{2.5}$	CO_2e[1]
Operational Emissions Calculations					
Large-Vessel Idling	1.60	0.16	0.004	0.004	338
Small-Vessel Idling	0.46	0.05	0.001	0.001	97
Emergency Generator	0.01	0.12	0.003	0.003	23
Maintenance Dredging	0.001	0.02	0.0009	0.0009	2
Total:	**2.07**	**0.34**	**0.010**	**0.010**	**461**
BAAQMD Maximum Annual Emissions Threshold (tons/year)	10	10	15	10	1,212.54

Notes:
[1] BAAQMD's maximum annual emissions threshold for CO_2e can also be expressed as 1,100 metric tons per year (2,204.62 pounds per metric ton).
BAAQMD = Bay Area Air Quality Management District
CO_2e = carbon dioxide equivalent
lbs/day = pounds per day
N/A = Not available
NO_X = nitrogen oxide
PM_{10} = particulate matter 10 microns in diameter or less
$PM_{2.5}$= particulate matter 2.5 microns in diameter or less
ROG = reactive organic gas

Table AIR-20
Net Increase in Daily Operational Emissions of the Proposed Project as Compared to the No Action Alternative

Alternative	Emissions (lbs/day)				
	ROG	NO_X	PM_{10}	$PM_{2.5}$	CO_2e
No Action	6.32	0.63	0.018	0.018	1338
Proposed Project	17.7	2.5	0.073	0.071	3865
Net Increase (Proposed Project minus No Action)	**11.3**	**1.87**	**0.055**	**0.053**	**2,527**
BAAQMD Daily Emission Thresholds *	54	54	82	54	N/A

Notes:
Emissions are averaged from the total emissions (tons/1 year of operation [365 days]) for each alternative.
Net difference values may vary slightly due to rounding.
* The BAAQMD thresholds are from the BAAQMD's CEQA Air Quality Guidelines (2011).
BAAQMD = Bay Area Air Quality Management District
CEQA = California Environmental Quality Act
CO_2e = carbon dioxide equivalent
GHG = greenhouse gas
lbs/day = pounds per day
NO_X = nitrogen oxide
PM_{10} = particulate matter 10 microns in diameter or less
$PM_{2.5}$= particulate matter 2.5 microns in diameter or less
ROG = reactive organic gas

3.0 TOXIC AIR CONTAMINANTS AND HEALTH RISK ANALYSIS

3.1 TOXIC AIR CONTAMINANTS

In addition to the criteria air pollutants listed above, TACs or hazardous air pollutants are air pollutants that may lead to serious illness or increased mortality, even when present in relatively low concentrations. There are hundreds of different types of TACs with varying degrees of toxicity. Many TACs are confirmed or suspected carcinogens, or are known or suspected to cause birth defects or neurological damage. Secondly, many TACs can be toxic at very low concentrations. For some chemicals, such as carcinogens, there are no thresholds below which exposure can be considered risk-free.

Industrial facilities and mobile sources are significant sources of TACs. Automobile exhaust also contains TACs such as benzene and 1,3-butadiene. Most recently, diesel particulate matter (DPM) was identified as a TAC by CARB. DPM differs from other TACs in that it is not a single substance but rather a complex mixture of hundreds of substances. BAAQMD research indicates that mobile-source emissions of DPM, benzene, and 1,3-butadiene represent a substantial portion of the ambient background risk from TACs in the San Francisco Bay Area Air Basin. For the proposed project, the TACs of concern are DPM and $PM_{2.5}$, which would be emitted by heavy construction equipment and by marine vessels during project operation.

3.2 HEALTH RISK ANALYSIS

The proposed project's construction and operational activities could affect local air quality. The primary sources of health risks from construction equipment are DPM, which is produced by diesel engine exhaust; and $PM_{2.5}$. As shown in Tables AIR-17 and AIR-19 above, emissions of PM_{10} and $PM_{2.5}$ in equipment exhaust would not exceed the significance criteria for regional emissions of criteria pollutants. However, localized $PM_{2.5}$ and DPM emissions could expose sensitive receptors to substantial concentrations, resulting in health risks. These pollutants were evaluated to identify potential cancer risk and chronic noncancer hazards.

The construction and operational health risk analysis evaluated the potential risk to existing sensitive receptors in the vicinity of the proposed project areas. Risk characterization and model results are discussed in this section.

The thresholds for individual project risks and hazards are:

- An excess lifetime cancer risk level of more than 10 in one million;
- A noncancer (chronic) risk greater than 1.0; and
- An incremental increase in the annual average $PM_{2.5}$ concentration greater than 0.3 microgram per cubic meter ($\mu g/m^3$).

3.2.1 Sensitive Receptors

To assess the health risks on sensitive receptors from the project's construction and operation, the nearest residential, school (including day cares), medical, and commercial sensitive receptors were identified. The distance between the nearest residential-zoned property and the project area is approximately 300 feet (91.4 meters). The nearest school is approximately 293 feet (89.3 meters) from the project area. A medical facility is located approximately 4,168 feet (1,270 meters) from the project area. A commercial property is within the project area and was considered to be 0 feet from the project area.

3.2.2 SCREEN3 Model and Inputs

The U.S. EPA's SCREEN3 model was used to perform a screening-level analysis of the potential health risks of the proposed project. The SCREEN3 model is a "single source Gaussian plume model which provides maximum ground-level concentrations for point, area, flare, and volume sources" (U.S. EPA, 2012b). The model was used to identify a maximum ground-level concentration near the project area, and the concentrations at the nearest four sensitive receptor types described above. As detailed below, these concentrations were then converted into chronic and carcinogenic risks for the health risk analysis.

Inputs required for the model include source type, receptor, and source heights; project area dimensions; emission rates (in grams/second*square meters); and distances to the nearest sensitive receptors. For this analysis, the following model inputs were used:

- Source type = Area source;
- Receptor and source heights = 1.8 meters;
- Project area dimensions = 1,543 feet by 829 feet (or approximately 470 meters by 253 meters), or a total project area of 1,279,147 square feet; and
- Project's emission rates (discussed further below).

Total PM_{10} emission rates for each of the project's construction years (Table AIR-3) and the project's net operational PM_{10} emissions (Table AIR-19) were converted from tons/year to grams/(second*square meters). The converted project emission rates are provided in Table AIR-21. PM_{10} emissions were used as a surrogate for DPM emissions.

Table AIR-21
Summary of Project PM_{10} Emission Rates and Rate Conversions for the SCREEN3 Modeling

	Total Emissions (Tons/Year)	**Total Emissions (grams/[second*square meters])**
Construction		
2014	0.88	2.14E-07
2015	0.48	1.17E-07
Operation (2018)	0.10	2.43E-09

Notes:
1 ton = 907,184.74 grams
1 year = 31,536,000 seconds
Project area = approximately 118,836.65 square meters
PM_{10} = particulate matter 10 microns in diameter or less

3.2.3 SCREEN3 Model Results

Table AIR-22 provides the SCREEN3-modeled ground-level DPM concentrations (in $\mu g/m^3$) at the nearest sensitive receptors from the project's construction and operational activities. The 2014 and 2015 construction emissions were averaged for use in the chronic and carcinogenic risk calculations.

Table AIR-22 SCREEN3 Results – Ground-Level Concentrations of DPM at Nearest Sensitive Receptors to Project Area				
Sensitive Receptor Type	**Construction Concentrations ($\mu g/m^3$)**			**Operational Concentrations (2018) ($\mu g/m^3$)**
	2014	**2015**	**Average**	
Residence	6.5	3.56	5.03	7.39E-02
School	5.63	3.08	4.35	6.40E-02
Commercial Building	7.10	3.89	5.50	8.08E-02
Medical	0.97	0.53	0.75	1.11E-02
Notes: Distances to nearest sensitive receptors are provided previously in text above.				

3.2.4 Exposure Assumptions

The exposure assessment estimates human exposure to substances that can increase cancer risk or cause chronic noncancer health risks. The primary exposure pathway for DPM is through inhalation.

Dose-response assessment is the process of characterizing the relationship between exposure to an agent and incidence of an adverse health effect in exposed populations. In quantitative carcinogenic risk assessments, the dose-response relationship is expressed in terms of a potency slope that is used to calculate the probability or risk of cancer associated with an estimated exposure. Cancer potency factor is expressed as the 95th percent upper confidence limit of the slope of the dose response curve, and assumes continuous lifetime exposure to a substance at a dose of 1 milligram per kilogram of body weight-day, commonly expressed in units of inverse dose, i.e., (milligrams per kilogram per day [mg/kg-day])-1. It is assumed in cancer risk assessments that risk is directly proportional to dose and that there is no threshold for carcinogenesis. The California Office of Environmental Health Hazard Assessment (OEHHA) has compiled cancer potency factors, which are used in risk assessments (OEHHA, 2011).

For noncarcinogenic effects, dose-response data developed from animal or human studies are used to develop chronic noncancer reference exposure levels (RELs). The chronic RELs are defined as the concentration at which no adverse noncancer health effects are anticipated. The most sensitive health effect is chosen to determine the REL if the chemical affects multiple organ systems. Unlike cancer health effects, noncancer chronic health effects are generally assumed to have thresholds for adverse effects. In other words, chronic injury from a pollutant will not occur until exposure to that pollutant has reached or exceeded a certain concentration (i.e., threshold). The chronic RELs are intended to be below the threshold for health effects for the general population.

Risk characterization is the final step of risk assessment. Modeled concentrations and public exposure information, which are determined through exposure assessment, are combined with potency factors and RELs that are developed through dose-response assessment.

3.2.5 Cancer Risk

The maximum incremental cancer risk from exposure to DPM was calculated by estimating exposure to carcinogenic chemicals, and multiplying the dose times the cancer potency factor. The following equation was used to determine cancer risk:

Cancer Risk = (Dose * CRAF), where:

Cancer Risk = risk (potential chances per million)

Dose = dose through inhalation (mg/kg-day)

CRAF = Cancer risk adjustment factor (exposure period for project activity (2 years for construction or 70 years for operation)/total exposure period (70 years)

Dose is estimated using the following equation:

Dose = (Cair * DBR * EF * ED * CF * Slope Factor)/AT, where:

Dose = dose through inhalation (mg/kg-day)

Cair = annual air concentration ($\mu g/m^3$) from the SCREEN3 model at each sensitive receptor location

DBR = daily breathing rate (393 L/kg body weight-day for maximum rate over a 70-year exposure duration)

EF = exposure frequency (350 days/year, recommended default value)

ED = exposure duration (70 years, recommended default value)

CF = conversion factor (10-6 ([mg/μg] * [m^3/L])

Slope Factor = the OEHHA-established cancer potency slope factor of 1.1 (mg/kg-day)-1 for DPM.

AT = averaging time (25,550 days or 70 years)

For the cancer risk analysis, the dose was calculated using the default values provided above and the annual air concentrations at each sensitive receptor location from the air screening (SCREEN3) model. Default values were based on the guidance provided by OEHHA (2003). To determine incremental cancer risk, the estimated dose through inhalation was multiplied by the OEHHA-established cancer potency slope factor of 1.1 (mg/kg-day)-1 for DPM. The CRAF used for the construction risk calculations was 2 years/70 years or 0.02857. The operation risk's CRAF was one (70 years/70 years).

Results for cancer risk and chronic noncancer hazard impacts are provided in Table AIR-23 for each of the nearest sensitive receptor types. Based on the assessment described above, it was determined that the maximum incremental cancer risk at any of the receptor locations would be 5.21 in one million, which is below the threshold of 10 in one million. Thus, incremental cancer risks at the various sensitive receptor sites would be below the cancer risk threshold (as presented in Table AIR-23).

Table AIR-23 Summary of the Project's Carcinogenic and Chronic Health Risks at Nearest Sensitive Receptors to Project Area				
	Construction Risks		**Net Operational Risks**	
Sensitive Receptor Type	**Chronic Risk (unitless)**	**Carcinogenic Risk (per million)**	**Chronic Risk (unitless)**	**Carcinogenic Risk (per million)**
Residence	0.08	4.77	0.0012	2.45
School	0.07	4.12	0.0010	2.12
Commercial Building	0.09	5.21	0.0013	2.68
Medical	0.012	0.71	0.0002	0.37
BAAQMD Significance Level	**1**	**10**	**1**	**10**
Notes: Distances to nearest sensitive receptors are provided previously in text above.				

3.2.6 Chronic Noncancer Hazard Index

The potential for exposure to result in chronic noncancer effects is evaluated by comparing the estimated annual average air concentration (which is equivalent to the average daily air concentration) to the chemical-specific noncancer chronic RELs. The chronic REL is the inhalation exposure concentration at which no adverse chronic health effects would be anticipated following exposure. When calculated for a single chemical, the comparison yields a ratio termed a hazard quotient.

The chronic risk level is calculated as follows:

Inhalation chronic risk = Cair / cREL, where:

Cair = annual concentration ($\mu g/m^3$)

cREL = Chronic noncancer REL ($\mu g/m^3$)

For this analysis, the SCREEN3 model results were converted using an adjustment factor of 0.8 from 1-hour concentrations ($\mu g/m^3$) to annual concentrations ($\mu g/m^3$). A REL of 5 was used for mercury, as recommended by OEHHA (2011). The inhalation chronic risk results are presented in Table AIR-23. As shown in the table, the DPM exposure from the project's construction and operation emissions would result in a maximum chronic hazard index of 0.09 at the commercial receptor, which, when divided by the REL of 5, is well below the threshold of 1.0.

3.2.7 Ambient $PM_{2.5}$ Concentrations

The $PM_{2.5}$ ground-level concentrations were modeled in SCREEN3 using the $PM_{2.5}$ emissions from the project's construction and operation activities. Results of the analysis indicate that unmitigated $PM_{2.5}$

construction-related concentrations at three of the nearest sensitive receptors would be greater than the BAAQMD significance threshold of 0.3 $\mu g/m^3$ (see Table AIR-24). However, implementation of Mitigation Measures AQ-1 and AQ-2 would reduce the $PM_{2.5}$ concentrations to levels less than the BAAQMD's significance health risk threshold.

Table AIR-24
Summary of the Project's $PM_{2.5}$ Concentrations at the Nearest Sensitive Receptors

Sensitive Receptor Type	Construction Concentrations		Net Operational Concentrations
	$PM_{2.5}$ (unmitigated)	**$PM_{2.5}$ (mitigated)**	**$PM_{2.5}$ (unmitigated)**
Residence	**0.403**	0.140	0.006
School	**0.348**	0.121	0.005
Commercial Building	**0.440**	0.153	0.006
Medical	0.060	0.021	0.001
BAAQMD Significance Level	**0.3**	**0.3**	**0.3**

Notes:
Distances to nearest sensitive receptors are provided previously in text above.

3.3 CUMULATIVE HEALTH RISK

The cumulative analysis is conducted for the project site and results are compared to the thresholds for cumulative effects:

- An excess lifetime cancer risk level of more than 100 in one million;
- A chronic noncancer HI greater than 10; and
- An incremental increase in the annual average $PM_{2.5}$ of greater than 0.8 $\mu g/m^3$.

The incremental increase in $PM_{2.5}$ concentrations, incremental cancer risk, and chronic HI from all past, present, and foreseeable future sources (including stationary sources) within a 1,000-foot radius from the project area, plus the contribution from the project, are analyzed for the cumulative health risk assessment. Stationary source within the 1,000-foot buffer zone of each project site are presented in Table AIR-25.

The screening $PM_{2.5}$ concentration, cancer risks, and chronic hazards values for permitted stationary sources were obtained from the BAAQMD county-specific kml files for Google EarthTM (BAAQMD, 2012). These files included $PM_{2.5}$ concentrations, cancer risks, and hazards values. Table AIR-25 shows these cumulative values from all sources within a 1,000-foot buffer zone of the project area. The cumulative values include the maximum project $PM_{2.5}$, chronic, and carcinogenic risk operational values. As shown in the table, the maximum project cumulative operational values would result in a $PM_{2.5}$ concentration of 0.309 $\mu g/m^3$, a cancer risk of 91 in one million, and a chronic hazard index of 0.040.

Table AIR-25 Summary of the Project's Cumulative Health Risks			
Emission Sources	**Carcinogenic Risk (per million)**	**Chronic Hazard Index (unitless)**	**$PM_{2.5}$ Concentration ($\mu g/m^3$)**
Proposed Project	2.68	0.0013	0.006
AMB Property	9.29	0.00328	0.00214
Paramount One	0.09	0.001	0.176
Hotel Vitale	2.79	0.01067	0.00289
Davis Cleaners	7.49	0	0
Equity Office/Ferry Building	68.9	0.024	0.122
Total	91.239	0.040	0.309
BAAQMD Significance Level	**100**	**10**	**0.8**
Exceed Significance?	No	No	No
Source: BAAQMD 2012.			

4.0 REFERENCES

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APPENDIX C

SPECIAL-STATUS SPECIES LIST

Appendix C
Federal and State Special-Status Species Potentially Occurring Within the Downtown San Francisco Ferry Terminal Expansion Study Area

Common Name	Scientific Name	Status			Supporting Habitat/Flowering Period	Likelihood of Occurrence in the Study Area
		Federal	State	CNPS		
Mammals						
Pallid bat	*Antrozous pallidus*		SC	NA	Rocky outcrop regions with scattered desert scrub, ranges up into the forested oak and pine regions. Roosts in rock crevices and buildings, less frequently in mines, caves, and hollow trees.	**None:** No suitable habitat present.
Guadalupe fur seal	*Arctocephalus townsendi*	T/MMPA	T	NA	Rocky coasts and associated caves. Ranges from Point Reyes National Seashore, CA to Puerto Guerrero, near the Mexico/Guatemala border. Commonly found from the Channel Islands, CA to Cedros Island, Baja California, Mexico.	**None:** No suitable habitat present.
Sei whale	*Balaenoptera borealis*	E/MMPA	None	NA	Pacific Ocean marine waters; historically in San Francisco Bay.	**None:** No suitable habitat present.
Blue whale	*Balaenoptera musculus*	E/MMPA	None	NA	Pacific Ocean marine waters; historically in San Francisco Bay.	**None:** No suitable habitat present.
Finback (=fin) whale	*Balaenoptera physalus*	E/MMPA	None	NA	Pacific Ocean marine waters; historically in San Francisco Bay.	**None:** No suitable habitat present.
Townsend's big-eared bat	*Corynorhinus townsendii*		SC	NA	Roosts in open hangings from walls and ceilings.	**Low to Moderate:** May roost in adjacent buildings.
Southern sea otter	*Enhydra lutris nereis*	T/MMPA	None	NA	Pacific Ocean nearshore marine waters; historically in San Francisco Bay.	**Low:** May occur as incidental and transitory; supporting marine and kelp forest habitat absent.

Appendix C
Federal and State Special-Status Species Potentially Occurring Within the Downtown San Francisco Ferry Terminal Expansion Study Area (Continued)

Common Name	Scientific Name	Status			Supporting Habitat/Flowering Period	Likelihood of Occurrence in the Study Area
		Federal	State	CNPS		
Gray whale	*Eschrichtius robustus*	MMPA	None	NA	Pacific Ocean marine waters; occasionally in San Francisco Bay.	**Low:** May occur as incidental and transitory in central San Francisco Bay. Unlikely to enter the ferry terminal basins.
Right whale	*Eubalaena (=Balaena) glacialis*	E/MMPA	FP	NA	Near shore in shallow waters, large bays.	**None:** No suitable habitat present.
Steller (=northern) sea- lion	*Eumetopias jubatus*	T/MMPA	None	NA	Isolated shoreline and rocky islands from San Mateo County north.	**None:** No suitable habitat present.
Critical habitat, Steller (=northern) sea-lion (X)		CH		NA	Includes Southeast Farallon Island and Año Nuevo Island, and oceanic waters within 3,000 feet.	**None:** Project area is outside of this designated critical habitat.
Silver-haired bat	*Lasionycteris noctivagans*	None	SC	NA	Coniferous or mixed coniferous and deciduous forest, especially in areas of Old Growth.	**None:** No suitable habitat present.
Big free-tailed bat	*Nyctinomops macrotis*	None	SC	NA	Rocky areas of desert scrub or coniferous forests. Roosts by day in crevices on cliff faces.	**None:** No suitable habitat present.
Harbor seal	*Phoca vitulina*	MMPA	None	NA	Shallow water; in and near mouths of rivers; sand bars.	**Low:** May occur as incidental and transitory.
Sperm whale	*Physeter catodon (=macrocephalus)*	E/MMPA	None	NA	Pacific Ocean nearshore marine waters; historically in San Francisco Bay.	**None:** No suitable habitat present.
Salt Marsh Harvest Mouse	*Reithrodontomys raviventris*	E/MMPA	E/FP	NA	Coastal salt marsh, dense stands of pickleweed.	**None:** No suitable habitat present.
California Sea Lion	*Zalophus californicus californianus*	MMPA	None	NA	Shallow water; on offshore rocks, sand bars, bays.	**Low:** May occur as incidental and transitory.

Appendix C
Federal and State Special-Status Species Potentially Occurring Within the Downtown San Francisco Ferry Terminal Expansion Study Area (Continued)

Common Name	Scientific Name	Status			Supporting Habitat/Flowering Period	Likelihood of Occurrence in the Study Area
		Federal	State	CNPS		
Birds						
Western Snowy Plover	*Charadrius alexandrinus nivosus*	T	None	NA	Sandy coastal beaches, salt pans, coastal dredges spoils sites, dry salt ponds, salt pond levees.	**None:** No suitable habitat present.
Short-tailed albatross	*Diomedea albatrus*	T	None	NA	Breeds on remote island with little to no low vegetation. Forages within the nutrient-rich upwelling areas.	**None:** No suitable habitat present.
American peregrine falcon	*Falco peregrinus anatum*	D	FP	NA	Cliff ledges, particularly near shores and marshes.	**None:** No suitable habitat present.
Osprey	*Pandion haliaetus*	None	SC	NA	Along rivers, lakes, and coasts, nests in trees near or over water.	**None:** No suitable habitat present.
Brown pelican	*Pelecanus occidentalis*	D	D	NA	Nests on coastal islands, lacking ground predators; roosts on piers, buoys, and other structures.	**Low to Moderate:** Foraging habitat present, but no nesting habitat.
Double-crested cormorant (rookery)	*Phalacrocorax auritus*	None	SC	NA	Coastal cliffs, offshore islands, and inland along lake margins; nests on ground or in tall trees.	**Low to Moderate:** Foraging habitat present, but no nesting habitat.
California clapper rail	*Rallus longirostris obsoletus*	E	E, FP	NA	Salt marshes dominated by pickleweed and cord grass.	**None:** No suitable habitat present.
California least tern	*Sterna antillarum (=sterna, = albifrons) browni*	E	E, FP	NA	Flat, open areas along the coast near inshore estuaries, river mouths, or shallows, sandy ground with little or no vegetation, bays, freshwater ponds, channels, lakes.	**None:** No suitable habitat present.

Appendix C
Federal and State Special-Status Species Potentially Occurring Within the Downtown San Francisco Ferry Terminal Expansion Study Area (Continued)

Common Name	Scientific Name	Status			Supporting Habitat/Flowering Period	Likelihood of Occurrence in the Study Area
		Federal	State	CNPS		
Fish						
North American Green sturgeon, Southern DPS	*Acipenser medirostris*	T	SC	NA	Rivers and estuaries.	**Low to Moderate:** May migrate and/or forage in study area.
Green sturgeon, Southern DPS designated critical habitat		CH			Entire San Francisco Bay below MHHW.	**High:** Present within the project area.
Tidewater goby	*Eucyclogobius newberryi*	E	SC	NA	Upper end of lagoons in salinities less than 10 parts per thousand.	**None:** No suitable habitat present.
Delta smelt	*Hypomesus transpacificus*	T	T	NA	Sacramento-San Joaquin Delta, Suisun Bay, San Pablo Bay, river channels and sloughs.	**None:** No suitable habitat present.
Coho salmon, Central California Coast ESU	*Oncorhynchus kisutch*	E	E	NA	Between Punta Gordo and San Lorenzo River.	**Low:** May migrate and/or forage in study area.
Coho salmon, Central California Coast ESU designated critical habitat		CH		NA	Designated coastal drainages between Punta Gordo and San Lorenzo River.	**None:** Project area is outside of this designated critical habitat.
Steelhead, Central California Coast DPS	*Oncorhynchus mykiss*	T	None	NA	Delta, Suisun Bay and associated marshes, San Francisco Bay west to the Golden Gate bridge is designated as suitable habitat.	**Low to Moderate:** May migrate and/or forage in study area.
Steelhead, Central California Coast DPS designated critical habitat		CH		NA	South San Francisco Bay and associated marshes, slow moving sections of rivers, dead end sloughs; San Francisco Bay west to the Golden Gate Bridge designated as critical habitat.	**High:** Present within the project area.
Steelhead, Central Valley DPS	*Oncorhynchus mykiss*	T		NA		**Low to Moderate:** May migrate and/or forage in study area.

Appendix C
Federal and State Special-Status Species Potentially Occurring Within the Downtown San Francisco Ferry Terminal Expansion Study Area (Continued)

Common Name	Scientific Name	Status			Supporting Habitat/Flowering Period	Likelihood of Occurrence in the Study Area
		Federal	State	CNPS		
Steelhead, Central Valley DPS designated critical habitat		CH		NA	Central Valley rivers and their tributaries, west to the Pacific ocean, inclusive.	**None:** Project area is outside of this designated critical habitat.
Chinook salmon, Central Valley spring-run ESU	*Oncorhynchus tshawytscha*	T (PE)	T	NA	Central Valley rivers and their tributaries, west to the Pacific Ocean.	**Low to Moderate:** May migrate and/or forage in study area.
Chinook salmon, Sacramento River winter-run ESU	*Oncorhynchus tshawytscha*	E	E	NA	Sacramento River from Keswick Dam (near Redding) south to Chipps Island, then west through Carquinez Strait, San Pablo Bay, and San Francisco Bay.	**Low to Moderate:** May migrate and/or forage in study area.
Chinook salmon, Sacramento River winter-run ESU designated critical habitat		CH		NA	Sacramento River from Keswick Dam (near Redding) south to Chipps Island, then west through Carquinez Straight, San Pablo Bay and San Francisco Bay; Pacific Ocean.	**High:** Present within the project area.
Central Valley fall/late-fall Chinook salmon	*Oncorhynchus tshawytscha*	SC	SC	NA	Central Valley rivers and their tributaries, west to the Pacific Ocean.	**Low to Moderate:** May migrate and/or forage in study area.
Sacramento splittail	*Pogonichthys macrolepidotus*	D	SC	NA	Fresh water from lower Sacramento and San Joaquin rivers down to Montezuma Slough (may extend to the mouth of Napa River at San Pablo Bay).	**None:** No suitable habitat present.
Longfin smelt		C	T	NA	San Francisco Estuary, including the Delta, Suisan Marsh, and San Francisco Bay to the Golden Gate.	**Low to Moderate:** May migrate and/or forage in study area.

Appendix C
Federal and State Special-Status Species Potentially Occurring Within the Downtown San Francisco Ferry Terminal Expansion Study Area (Continued)

Common Name	Scientific Name	Status			Supporting Habitat/Flowering Period	Likelihood of Occurrence in the Study Area
		Federal	State	CNPS		
Invertebrates						
Black abalone	*Haliotis cracherodii*	E	None	NA	Rocky, low intertidal zone up to 6 meters deep.	**None:** No suitable habitat present.
White abalone	*Haliotis sorenseni*	E	None	NA	Open low- or high-relief rock or bolder areas interspersed with sand channels. Most abundant 80 to 100 feet deep.	**None:** No suitable habitat present.
Mission blue butterfly	*Icaricia icarioides missionensis*	E	None	NA	Coastal grasslands and shrub areas where their host plant *Lupinus sp*. occurs.	**None:** No suitable habitat present.
Callippe silverspot butterfly	*Speyeria callippe callippe*	E	None	NA	Grassy hillsides, chaparral, and oak woodland with native forbs; host plant a native violet (*Viola pedunculata*).	**None:** No suitable habitat present.
Reptiles and Amphibians						
California red-legged frog	*Rana aurora draytonii*	E	SC	NA	Lowlands and foothills with deep water remaining for at least 11 weeks; water source is usually associated with abundant emergent and/or shoreline vegetation.	**None:** No suitable habitat present.
Plants						
Presidio (=Raven's) Manzanita	*Arctostaphylos hookeri* ssp. *ravenii*	E	None	1B.1	Open scrub and serpentine areas.	**None:** No suitable habitat present.
Tiburon paintbrush	*Castilleja affinis* ssp. *neglecta*	E	T	1B.2	Serpentine soils; April through June.	**None:** No suitable habitat present.
Presidio clarkia	*Clarkia franciscana*	E	E	1B.1	Coastal shrub, valley, and foothill grasslands.	**None:** No suitable habitat present.

Appendix C
Federal and State Special-Status Species Potentially Occurring Within the Downtown San Francisco Ferry Terminal Expansion Study Area (Continued)

Common Name	Scientific Name	Status			Supporting Habitat/Flowering Period	Likelihood of Occurrence in the Study Area
		Federal	State	CNPS		
Marin dwarf flax	*Hesperolinon congestum*	T	T	1B.1	Chaparral, grassland; serpentinite; April through July.	**None:** No suitable habitat present.
San Francisco lessingia	*Lessingia germanorum*	E	E	1B.1	Coastal sand dunes and sandy soils with moderately open scrub or herbaceous vegetation.	**None:** No suitable habitat present.
Showy Indian clover	*Trifolium amoenum*	E	None	1B.1	Wet swales, grasslands, and grassy hillsides; occasionally found on serpentine soils; April through June.	**None:** No suitable habitat present.

Notes:
Federal Status Codes:
E= Endangered. Species in danger of extinction throughout all or a significant portion of its range.
T = Threatened. Species likely to become endangered within the foreseeable future.
D= Delisted
SC = Species of Concern
MMPA= Marine Mammal Protection Act

California Status Codes:
E= Endangered. Species whose continued existence in California is in jeopardy
T = Threatened. Species likely to become endangered within the foreseeable future.
SC = Species of Special Concern
R = Rare. Plant species, although not presently threatened with extinction, that may become endangered in the foreseeable future.

California Native Plant Society Status Codes:
1A = Plants presumed extinct in California
1B = Plants that are rare, threatened or endangered in California and elsewhere.
2 = Plants that are rare, threatened or endangered in California, but more common elsewhere.
3 = Plants about which more information is needed.
4 = Plants of limited distribution.

CNPS = California Native Plant Society
DPS = distinct population segment
ESU = evolutionarily significant unit
MHHW = mean higher high water
NA = not applicable

APPENDIX D

AGENCY COORDINATION AND CONSULTATION

WETA Downtown San Francisco Ferry Terminal Expansion Project
Agency Coordination Meeting #1
Meeting Summary

Location: URS offices, San Francisco
Date: December 8, 2011
Time: 10:00 -11:00 am

Attendees:		
	Mike Gougherty	WETA
	John Sindzinski	WETA
	Debra Jones	FTA
	Mark D'Avignon	Corps
	Holly Costa*	Corps
	Mandy Morrison	NOAA-NMFS
	Susan Sturges	USEPA Region 9
	James Hurley	Port of San Francisco
	Bob Batha	BCDC
	Ming Yeung	BCDC
	Bernadette Lambert	BART
	Michelle Anderson*	State Lands Commission
	J.G. DeCarol Davis*	USCG
	Bettina Diaz*	USCG Facilities Inspector Sector 7
	Ian Austin	URS
	Mark Weisman	URS
	Julie Bixby*	URS
	Alana Callagy	URS
	Kelly Bayer	URS

*attended via telephone

Purpose:

- Provide agencies with an opportunity for meaningful participation in the environmental review process (per Section 6002 of SAFETEA-LU);
- Comment on the Draft Coordination Plan; and
- Discuss the purpose and need and project alternatives.

Introductions:
Following introduction of the attendees, FTA (Debra Jones) provided an overview of the purposes for the meeting, as listed above. It was emphasized that agency participation during each phase of the process will aid in developing a better EIS/EIR and will lessen the burden on agencies in reviewing the Draft EIS/EIR by allowing them to review and comment on preliminary draft versions of the purpose and need, alternatives, and methodology for analysis.

Draft Coordination Plan:
The agencies were previously provided with a Draft Coordination Plan for review and comment. The plan outlines agencies' roles, the coordination process, and schedule of key coordination activities.

FTA and WETA are the lead agencies under NEPA and CEQA, respectively. Federal agencies with special expertise will serve as cooperating agencies and will support scoping and public involvement activities and will provide technical assistance, as necessary, in addition to reviewing and commenting on preliminary draft documents; NMFS has agreed to serve as a cooperating agency. Participating agencies, those other agencies with an interest in the project, will aid in identifying potential issues of concern relevant to the environmental review process and project implementation in addition to reviewing and commenting on preliminary draft documents. The participating agencies for this project include: National Oceanographic and Atmospheric Administration – National Marine Fisheries Service; U.S. Army Corps of Engineers; U.S. Coast Guard, San Francisco Sector; U.S. Environmental Protection Agency; U.S. Fish and Wildlife Service; San Francisco Bay Conservation and Development Commission; Port of San Francisco; Bay Area Air Quality Management District; California State Lands Commission; and BART.

It was noted that scoping meetings were held in April 2011. This meeting serves as the first of two additional proposed coordination meetings. Agencies will have access to project documents and updates via the project website, http://www.watertransit.org/CurrentProjects/DTFX.aspx. A schedule of milestones for completing the EIS/EIR and decision documents was reviewed.

USEPA (Susan Sturges) noted Table 1 of the Coordination Plan should also reflect the USEPA's jurisdiction and interest also includes air quality (i.e., transportation conformity).

Purpose and Need:
The purpose and need for the project was summarized as follows:

- WETA needs additional berthing facilities in San Francisco to accommodate its planned route expansion;
- The proposed improvements are needed to allow WETA to effectively provide evacuation and disaster recovery services in accordance with its emergency response mandate; and
- To relieve pedestrian congestion around the terminal and provide better circulation.

Corps (Mark D'Avignon) recommended addressing the Section 404(b)(1) analysis in the EIS/EIR, and that the purpose and need should consider the USACE's approval requirements.

Range of Alternatives:
An overview of the Proposed Action and No Action Alternative were provided.

The Proposed Action represents Phase 2 of the planned improvements at the Downtown San Francisco Ferry Terminal. Phase 1, which was planned and implemented by the Port of San Francisco, occurred from 2001 to 2003 and involved construction of Gates B and E. Phase 2, this project, would add three additional gates and is proposed to be completed from 2014 to 2017.

Construction of Phase 2 would occur in two phases, with the north basin improvements being constructed first. The phasing is due to funding availability and limited staging area space at the terminal. Dredging work windows have been considered in the project schedule, and it was noted that relatively little dredging is proposed.

WETA is presently deciding whether Phase 3 will also be included in the project description for this EIS/EIR. Phase 3 would involve provision of bow-loading facilities to accommodate increased ridership from Treasure Island that is projected to occur between 2020 and 2030, and the construction of Phase 3 would not occur until that time.

NMFS (Mandy Morrison) noted that the Proposed Action as described involves the removal of Pier ½; however, removal of Pier ½ is being considered as mitigation for the America's Cup project. WETA has had preliminary discussions with the America's Cup project proponent regarding this matter and no decisions have been made yet. However, if the Pier is removed as a part of the America's Cup project, it would be removed from this project. It was also noted that Pier 2 is also being considered for removal as mitigation for the America's Cup project.

The Proposed Action was developed in consideration of the alternatives evaluated in Phase 1. The draft alternatives chapter details several alternatives that were previously considered. Based on previous planning efforts the Draft EIS/EIR for this project will analyze the No Action Alternative (No Project Alternative) and the Action Alternative as described today.

It was noted that the environmental analysis for the individual expanded routes is being addressed in separate NEPA/CEQA documents. WETA completed an Implementation and Operation Plan (IOP) and a Program-level EIR for the IOP in 2003, which addressed its route expansion program. As individual routes are proposed, separate NEPA/CEQA documents are being prepared for the route. This project would provide facilities for the new routes in San Francisco but it is assumed that the route expansion would take place even if the facility improvements were not implemented (described in the No Action Alternative). It was suggested that the cumulative impacts analysis for the San Francisco Ferry Terminal Expansion Project consider the impacts of the arrival of the additional service lines at the San Francisco terminal.

Permitting:
Attending agency representatives provided the following input on permitting requirements:

- Corps (Mark D'Avignon) noted that the proposed dredging activity may be able to be covered under the Port's maintenance dredging permit. The current permit expires in 2013 and it may be possible to cover the dredging for the Downtown Ferry Terminal Expansion Project in the renewal. It was also noted that the area proposed for dredging for the project may overlap with the area proposed for dredging for the America's Cup. Rob Lawrence with the Corps should be contacted for additional information.
- Corps (Mark D'Avignon) stated that it may be possible to combine the Section 10 and Section 404 permitting processes for the project.
- The USCG typically requires an anchor waiver (which would apply to barges used for construction). All private aids to navigation will need to comply with navigation standards; this is handled by the District office. Additionally, due to the proximity to the bridge, the bridge office should be kept informed of the project.

- NMFS will be the lead consulting agency for the Section 7 consultation.
- Monica D'Angelis with NMFS in Long Beach should be contact regarding marine mammal harassment issues.

Next Steps

- Agencies to provide comments on Draft Coordination Plan, Purpose and Need, and Alternatives by January 6, 2012 (email is acceptable).
- EIS/EIR impact analysis methodology will be provided to agencies for review and comment.
- Next agency coordination meeting in Spring 2012, prior to publication of Draft EIS/EIR

U.S. Department
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JUN 04 2012

Re: Area of Potential Effect (APE)
Downtown San Francisco Ferry Terminal
Expansion Project – Area of Potential Effects

Dear Mr. Donaldson:

The Federal Transit Administration (FTA) in cooperation with the San Francisco Bay Area Water Emergency Transportation Authority (WETA) proposes an expansion and improvement of the Downtown San Francisco Ferry Terminal at the Ferry Building to accommodate phased construction of three new gates and overwater berthing facilities, in addition to supportive landside improvements, such as additional passenger waiting and queuing area and circulation improvements. The project, the Downtown San Francisco Ferry Terminal Expansion Project, in the City and County of San Francisco, will be a Federal undertaking if FTA provides financial assistance. The FTA, in accordance with revised implementing regulations of the National Historic Preservation Act (NHPA) found at 36 CFR 800.3(a), has determined that the proposed project is an undertaking. The FTA would like to initiate consultation with the California Office of Historic Preservation pursuant to § 800.3(c) (3), and request concurrence with FTA's delineation of the proposed Area of Potential Effects (APE) as defined in § 800.16(d).

The proposed construction is scheduled to commence in 2014 and be completed by 2020. The project is being implemented to support existing and planned future water transit services operated by WETA as well as WETA's emergency response operations. The Port of San Francisco is the landowner of the Ferry Building property and WETA is working with the Port to execute a lease and to develop a project design that minimizes potential impacts on historic resources.

Pursuant to the revised implementing regulations of the NHPA found at 36 CFR 800.4(a) (1), the FTA seeks your concurrence with its delineation of the respective APEs for both archaeological and historic architectural resources. Attached to this request are technical reports prepared by specialists in these resources from URS Corporation and JRP Historical Consulting. These reports describe the APEs and known resources present within the APEs for archaeological and historic architectural resources. Maps of both the archaeological and architectural APEs are included within these reports.

We look forward to receiving your response within 30 days of your receipt of this submittal. If you need any additional information, please do not hesitate to call Alex Smith, (alexander.smith@dot.gov), Community Planner, at (415) 744-2599. Thank you for your assistance in this undertaking.

Sincerely,

Leslie T. Rogers
Regional Administrator

Enclosures:

Archaeological Inventory Technical Report for the Downtown San Francisco Ferry Terminal Expansion Project

Historic Architectural Resources Inventory Technical Report for the Downtown San Francisco Ferry Terminal Expansion Project

Copy to (by email):

Amanda Blosser, OHP
Michael Gougherty, Water Emergency Transportation Authority
Mark Paez, Port of San Francisco

STATE OF CALIFORNIA – THE RESOURCES AGENCY EDMUND G. BROWN, JR., *Governor*

OFFICE OF HISTORIC PRESERVATION
DEPARTMENT OF PARKS AND RECREATION
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www.ohp.parks.ca.gov

September 13, 2012 Reply in Reference To: FTA120608A

Leslie T. Rogers
Regional Administrator
US Department of Transportation
Federal Transit Administration
201 Mission Street, Suite 1650
San Francisco, CA 94105

Re: San Francisco Water Emergency Transportation Authority proposed Downtown San Francisco Ferry Terminal Expansion

Dear Mr. Rogers:

Thank you for seeking my consultation regarding the above noted undertaking. Pursuant to 36 CFR Part 800 (as amended 8-05-04) regulations implementing Section 106 of the National Historic Preservation Act (NHPA), the Federal Transit Administration (FTA) is seeking my comments on the delineation of the Area of Potential Effects (APE), pursuant to 36 CFR 800.4(a)(1).

The project consists of constructing three new gates, an access pier, removing Pier ½ and Pier 2, removing portions of existing deck and pile construction, and improving passenger boarding areas, amenities, and circulation. The improvements will involve rehabilitating the bulkhead wharf in the North Basin, extending the East Bayside Promenade, strengthening the South Apron of the Agriculture Building, creating an Embarcadero Plaza, and installing weather protection canopies in queuing areas.

The area of potential effects (APE) includes areas east of The Embarcadero, south of Pier 1, and north of Pier 14. The vertical APE will indude dredging up to 14 feet below water level, and installation of piles up to 130 feet below water level.

Based on the information provided, pursuant to 36 CFR 800.4(a)(1), I concur that the Area of Potential Effects appears to be appropriately delineated

Thank you for seeking my comments and considering historic properties as part of your project planning. I look forward to continuing this consultation. If you have any questions or concerns, please contact Trevor Pratt of my staff at (916) 445-7017 or at email at tpratt@parks.ca.gov.

Sincerely,

Susan K Stratton for

Milford Wayne Donaldson, FAIA
State Historic Preservation Officer

U.S. Department
of Transportation
**Federal Transit
Administration**

REGION IX
Arizona, California,
Hawaii, Nevada, Guam
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FEB 14 2013

Carol Roland-Nawi, Ph.D
State Historic Preservation Officer
Office of Historic Preservation
California Department of Parks and Recreation
1416 9th Street, Room 1442-7
Sacramento, CA 95814
Attention: Dr. Susan Stattton, Project Review Unit

Re: FTA120608A - Section 106 Consultation for the Downtown San Francisco Ferry Terminal Expansion Project, Finding of Effect

Dear Ms. Roland-Nawi:

The San Francisco Bay Area Water Emergency Transportation Authority (WETA), in cooperation with the Federal Transit Administration (FTA), proposes an expansion and improvement of the Downtown San Francisco Ferry Terminal at the Ferry Building to accommodate construction of three new gates and overwater berthing facilities, including supportive landside improvements, such as additional passenger waiting and queuing area and circulation improvements. The FTA has determined that the proposed project would result in "no effect" to archaeological resources and "no adverse effect" for historic architectural resources. Pursuant to 36 CFR 800.5(b), the FTA seeks your concurrence with the Finding of Effect for both archaeological and historic architectural resources.

The FTA initiated consultation with the California Office of Historic Preservation pursuant to 36 CFR 800.3(c)(3) for this project in June 2012, and requested concurrence with FTA's delineation of the proposed APE as defined in § 800.16(d). The State Historic Preservation Officer's (SHPO) concurrence letter was dated September 13, 2012. Since the SHPO's concurrence with the Archaeological APE, the horizontal extent of the Archaeological APE has been modified to reflect a reduction in the size of the project's construction zone. This reduction in the construction footprint resulted in a corresponding reduction in the total area of the horizontal extent of the Archaeological APE. The reduced Archaeological APE falls entirely within the limits of the previously delineated horizontal APE previously submitted to the SHPO. The Architectural APE and Focused Architectural APE have not changed since the SHPO's concurrence.

No archaeological resources were identified within the Archaeological APE defined for the project through the inventory efforts; therefore; no effect on archaeological resources is anticipated from the proposed undertaking.

Two historic districts encompass or overlap within the Architectural APE: the Port of San Francisco Embarcadero Historic District, and the Central Embarcadero Piers Historic District. In addition to

contributing to one or both of these districts, three properties within the Focused Architectural APE—the Ferry Building, Agricultural Building, and Pier 1—are listed individually in the National Register of Historic Places and California Register of Historical Resources (shown on Table 2 in the Historic Architectural Resources Technical Report) . While project features and construction have the potential to impact these historic properties, with incorporation of mitigation measures to avoid or minimize impacts, the character-defining features of the Ferry Building, Agricultural Building, and Pier 1 would not be compromised and the contributing elements to the historic districts would not be adversely affected. Adverse impacts on historic properties from replacement of fendering on Pier 1 would be avoided by conducting the replacement in accordance with Secretary of Interior Standards for Treatment of Historic Properties (36 CFR part 68). Subsequent review of plans for rehabilitation would be coordinated with the SHPO to ensure consistency with the Secretary's Standards to avoid adverse effects. Similarly, the Final Design of weather protection canopies would be developed in consultation with the Port of San Francisco Waterfront Design Advisory Committee and San Francisco Historic Preservation Commission, and consistent with Secretary of Interior Standards for Treatment of Historic Properties to ensure that indirect adverse visual impacts on historic properties are avoided. Vibration impacts on historic properties during construction would be minimized through construction equipment selection, vibration monitoring, and corrective measures.

WETA has worked closely with the Port of San Francisco throughout the development of the project. The Port of San Francisco has jurisdiction over the project area and WETA and the Port have coordinated on developing the project, the project design, community outreach efforts, as well as on the assessment and evaluation of the project's potential effects. Additionally, WETA and the Port have initiated a coordination process to inform the San Francisco Historic Preservation Commission about the project.

Pursuant to 36 CFR 800.5(b), the FTA seeks your concurrence with the finding of "no effect" to archaeological resources and "no adverse effect" for historic architectural resources. Attached are technical reports, prepared, supporting FTA's determination of effect. These reports describe the resources present in the APEs for archaeological and historic architectural resources and an assessment of effects associated with the project. The technical report for historic architectural resources also details the above-referenced mitigation measures that would be implemented to minimize or avoid adverse effects.

Please provide your response within 30 days of receipt of this request. If you have questions, please contact Alex Smith, (alexander.smith@dot.gov), FTA at (415) 744-2599 or Michael Gougherty, Project Manager, (gougherty@watertransit.org) WETA at (415) 364-3189.

Sincerely,

Leslie T. Rogers
Regional Administrator

Enclosures:

Archaeological Resources Technical Report for the Downtown San Francisco Ferry Terminal Expansion Project

Historic Architectural Resources Technical Report for the Downtown San Francisco Ferry Terminal Expansion Project

Copy:

Michael Gougherty, Water Emergency Transportation Authority
Mark Paez, Port of San Francisco

STATE OF CALIFORNIA – THE RESOURCES AGENCY
Governor

EDMUND G. BROWN, JR.,

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April 15, 2013

Reply in Reference To: FTA120608A

Leslie T. Rogers
Regional Administrator
US Department of Transportation
Federal Transit Administration
201 Mission Street, Suite 1650
San Francisco, CA 94105

Re: Finding of Effect, San Francisco Water Emergency Transportation Authority (WETA) proposed Downtown San Francisco Ferry Terminal Expansion

Dear Mr. Rogers:

Thank you for continuing consultation regarding the above noted undertaking. Pursuant to 36 CFR Part 800 (as amended 8-05-04) regulations implementing Section 106 of the National Historic Preservation Act (NHPA), the Federal Transit Administration (FTA) is seeking my concurrence on a finding of no effect to archaeological resources and no adverse effect to architectural resources for the above-referenced project.

The project consists of constructing three new gates, an access pier, removing Pier ½ and Pier 2, removing portions of existing deck and pile construction, and improving passenger boarding areas, amenities, and circulation. The improvements will involve rehabilitating the bulkhead wharf in the North Basin, extending the East Bayside Promenade, strengthening the South Apron of the Agriculture Building, creating an Embarcadero Plaza, and installing weather protection canopies in queuing areas.

Since the original consultation on the Area of Potential Effect (APE, letter dated September 13, 2012) FTA has refined the horizontal extent of the Archaeological APE to reflect a reduction in the size of the project's construction zone, and the reduced APE falls within the limits of the previously delineated APE reviewed by my office. The architectural APE has not changed. I do not object to this modification.

FTA did not identify any archaeological resources within the APE. Contributing resources to the Port of San Francisco Embarcadero Historic District and the Central Embarcadero Piers Historic District are present within the APE, and three buildings have been previously determined to be individually eligible for the National Register of Historic Places (NRHP). While the project could potentially impact these structures, the proposed new weather protection canopies and any replacement fendering necessary will be consistent with the Secretary of the Interior's Standards for the Treatment of Historic Properties. Vibration impacts will be monitored and construction equipment will be selected to minimize vibration, and a plan for inadvertent damage will be implemented.

FTA has determined that the proposed project will have no effect on archaeological resources and no adverse effect on architectural resources. As a determination of effect is made for an undertaking as a whole, a finding of no adverse effect is appropriate for this project. Should you disagree with this determination please contact my staff, identified below.

Thank you for seeking my comments and considering historic properties as part of your project planning. I look forward to continuing this consultation. If you have any questions or concerns, please contact Trevor Pratt of my staff at (916) 445-7017 / trevor.pratt@parks.ca.gov or Kathleen Forrest at (916) 445-7022 / kathleen.forrest@parks.ca.gov.

Sincerely,

Susan K Stratton for

Carol Roland-Nawi, Ph.D.
State Historic Preservation Officer

U.S. Department
of Transportation
**Federal Transit
Administration**

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415-744-2726 (fax)

Rodney McInnis
Regional Administrator
National Marine Fisheries Service
c/o Santa Rosa Area Office
777 Sonoma Avenue, Room 325
Santa Rosa, CA 95404

APR 2 9 2013

RE: Request for Concurrence under Section 7 of the Endangered Species Act and the Magnuson-Stevens Fishery Conservation and Management Act, Downtown San Francisco Ferry Terminal Expansion Project, San Francisco County, California

Dear Mr. McInnis:

The Federal Transit Administration (FTA), in coordination with the project sponsor, the San Francisco Bay Area Water Emergency Transportation Authority (WETA), is requesting formal consultation with the National Marine Fisheries Service (NMFS) under Section 7 of the Endangered Species Act (ESA) and the Magnuson-Stevens Fishery Conservation and Management Act, for the Downtown San Francisco Ferry Terminal Expansion Project ("the project"). We are also requesting concurrence with our effects determinations for steelhead, salmon and green sturgeon and their associated critical habitat and essential fish habitat, which are shown in the table on the following page. FTA is the lead federal agency for compliance with the National Environmental Protection Act (NEPA).

The project includes expansion and improvement of the Downtown San Francisco Ferry Terminal at the Ferry Building, including construction of three new gates, overwater berthing facilities, and supportive landside improvements, such as additional passenger waiting and queuing area and circulation improvements. WETA, in coordination with the FTA, has prepared a Draft Environmental Impact Statement/Environmental Impact Report (EIS/EIR) for the project. As a cooperating agency pursuant to NEPA for this project, NMFS has been provided with information at various stages of project development and reviewed the Second Administrative Draft EIS/EIR; Ms. Amanda Morrison has been the primary point of contact for NMFS for the NEPA process.

The project includes demolition, removal, repair, and replacement of existing facilities, as well as construction of new facilities. The project includes the following elements:

- Removal of portions of existing deck and pile construction and fendering (portions would remain as open water, and other portions would be replaced);
- Construction of one new gate and access pier (Gate A) in the North Basin and two new gates (Gates F and G) in the South Basin; and
- Improved passenger boarding areas, amenities, and circulation, including rebuilding a portion of the marginal wharf in the North Basin, extending the East Bayside Promenade along Gates E, F, and G; strengthening the South Apron of the Agriculture Building; creating the Embarcadero Plaza; and installing weather protection canopies.

Summary of Effects for Federally Listed Species and Habitat			
Species	**Permanent Impacts**	**Death or Injury**	**Effects Determination**
Steelhead	No	Potential injury or mortality from noise – not likely	Project may affect, but is not likely to adversely affect.
Steelhead, critical habitat	No	N/A	Project may affect, but is not likely to adversely modify.
Steelhead, EFH	No	N/A	Project may adversely affect.
Sacramento winter-run Chinook Salmon	No	Potential injury or mortality from noise – not likely	Project may affect, but is not likely to adversely affect.
Sacramento winter-run Chinook Salmon, critical habitat	No	N/A	Project may affect, but is not likely to adversely modify.
Sacramento winter-run Chinook Salmon, EFH	No	N/A	Project may adversely affect.
Central Valley spring-run Chinook Salmon	No	Potential injury or mortality from noise – not likely	Project may affect, but is not likely to adversely affect.
Central Valley spring-run Chinook Salmon, EFH	No	N/A	Project may adversely affect.
Green sturgeon, Southern DPS	No	Potential injury or mortality from noise – not likely	Project is likely to adversely affect.
Green sturgeon, Southern DPS, critical habitat	No	N/A	Project may affect, but is not likely to adversely modify.
Green sturgeon, Southern DPS, EFH	No	N/A	Project may adversely affect.
Notes: DPS = Distinct Population Segment N/A = Not applicable			

As part of initiating formal consultation with NMFS for this project, we have prepared a biological assessment (BA), which is enclosed with this letter. The enclosed BA analyzes potential impacts of the project on:

- Steelhead (*Oncorhynchus mykiss*), hereafter referred to as steelhead, consisting of the following Distinct Population Segments (DPSs):
  - Central California Coast (CCC) (federally listed as threatened).
  - Central Valley (CV) (federally listed as threatened).
- Chinook salmon (*O. tshawytscha*), consisting of the following Evolutionarily Significant Units:
  - Sacramento River winter-run (federally listed as endangered).
  - CV spring-run (federally listed as threatened).
- Green sturgeon (*Acipenser medirostris*) Southern DPS, federally listed as threatened.

The BA concludes that the project may result in adverse, temporary effects to the evaluated species during construction. The BA further concludes that the project may affect critical habitat and essential fish habitat (EFH). The BA includes avoidance and minimization measures to reduce the potential adverse effects of the project on protected species. Our effects determination is presented in Section 8.2 of the BA, and this effects determination is summarized in the table on the preceding page.

As the lead federal agency under NEPA, FTA requests NMFS concurrence with the effects determination presented in the table above and in Section 8.2 of the BA, pursuant to Section 7 of the ESA and Section 305(b) of the Magnuson-Stevens Fishery Conservation and Management Act. We will continue to remain aware of any change in status of these species and will be prepared to reevaluate potential project impacts if necessary. If you have any questions, please contact Alex Smith, (alexander.smith@dot.gov), FTA at (415) 744-2599 or Michael Gougherty, Project Manager, (gougherty@watertransit.org) WETA at (415) 364-3189.

Sincerely,

Leslie T. Rogers
Regional Administrator

Enclosure: *Downtown San Francisco Ferry Terminal Expansion Project Biological Assessment*

Copy: Michael Gougherty, WETA